# RADIOLOGY of DIGESTIVE SYSTEM

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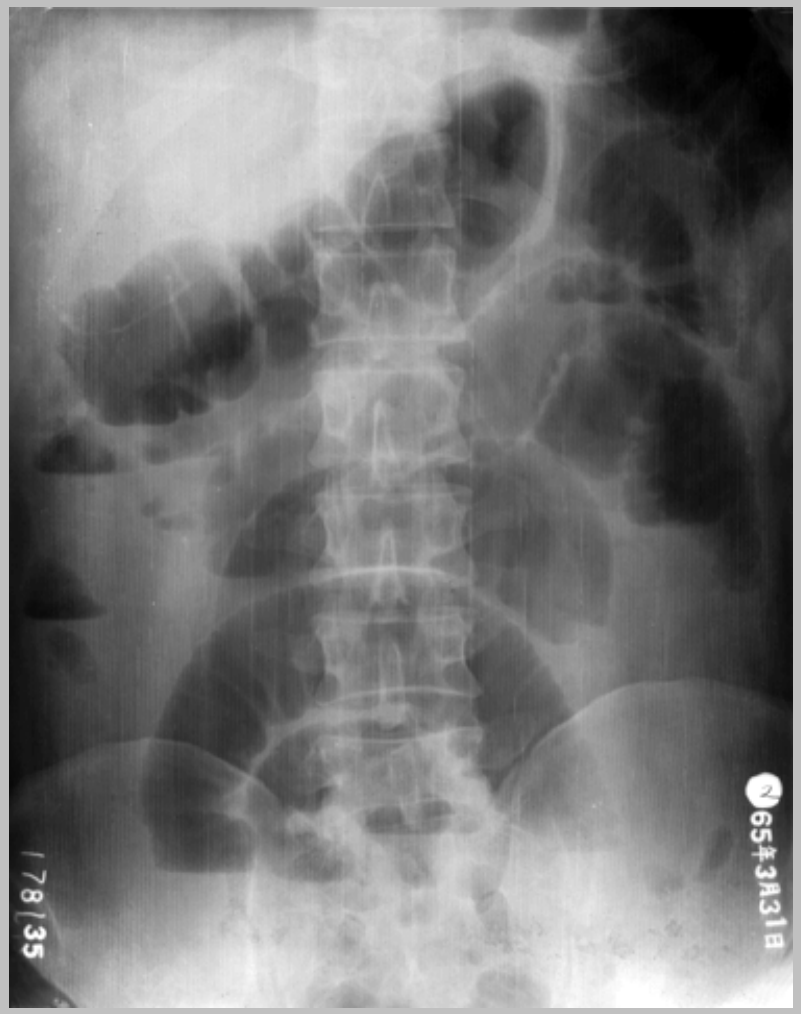
# *Diagnosis technique*

- **Radiography:**
  - **Plain Radiography**
  - **Contrast Examination**
    - Single contrast radiograph
    - Double contrast radiograph
    - Angiography
- **CT:**
- **MRI:**
- **USG:**

# Plain Radiography

- Acute abdomen
- Small bowel obstruction
  - “Coiled spring” appearance of the intestinal mucosa



# *Barium Labelled Contrast Radiography*

Barium swallow: pharynx and esophagus

Barium meal : upper GI Seris

Barium follow-through : small intestine

Barium enema: Large Intestine

**Announcement**

# Barium Labelled Contrast Radiography

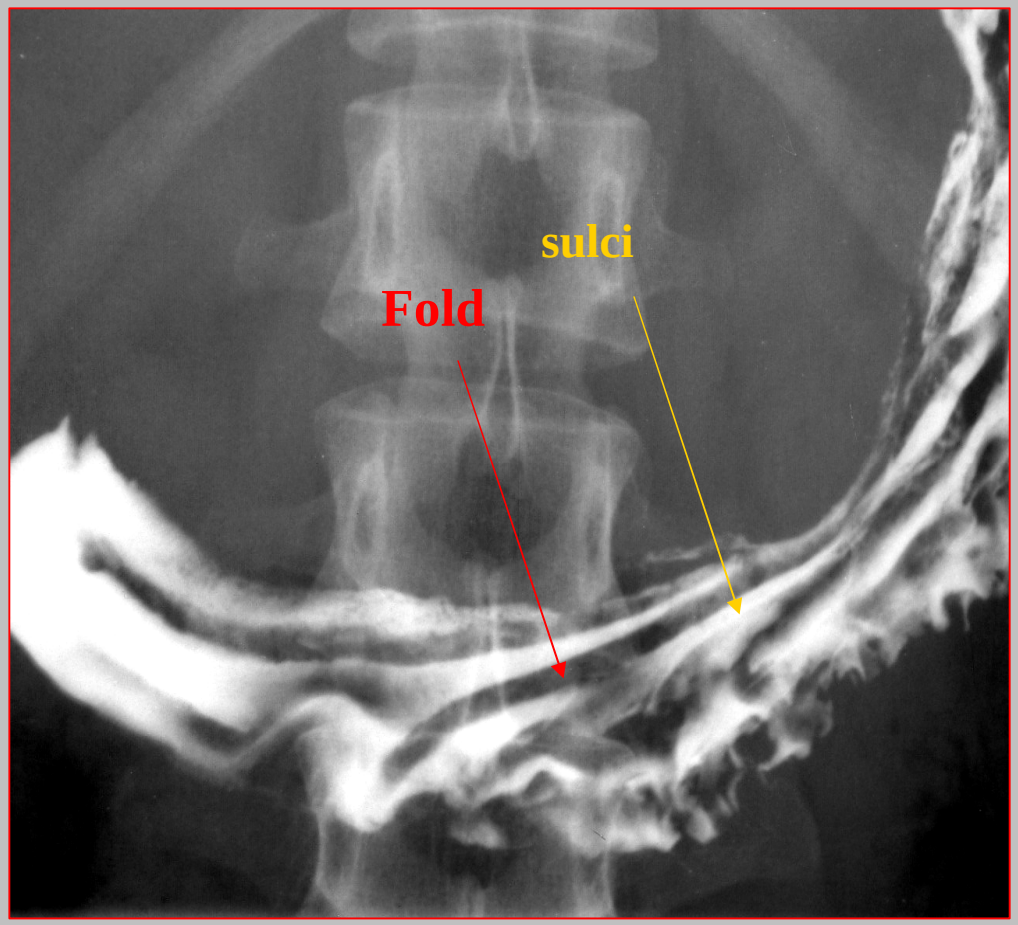
Technique：

- Mucosal coating view
- Filling view
- Compression view

# Oral Contrast Radiography

# Oral Barium Labelled Contrast Radiography

mucosal pattern



# Barium Labelled Contrast Radiography

Gas-barium double Contrast Radiography：filling view

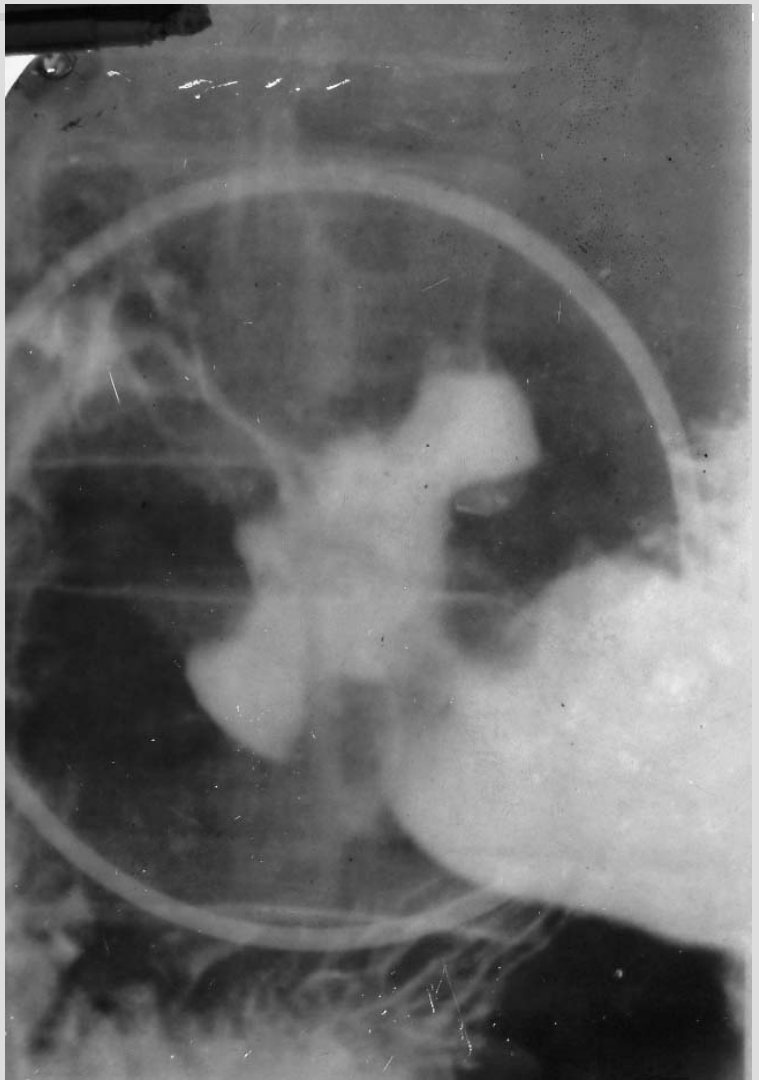
胃充盈像

# Barium Labelled Contrast Radiography

Compression view：

Duodenal bulb

十二指肠球部加压像



# Barium Labelled Contrast Radiography

Gas-barium double Contrast Radiography :

Barium enema

Sigmoid colon

# Computed Tomography

Finding:mass

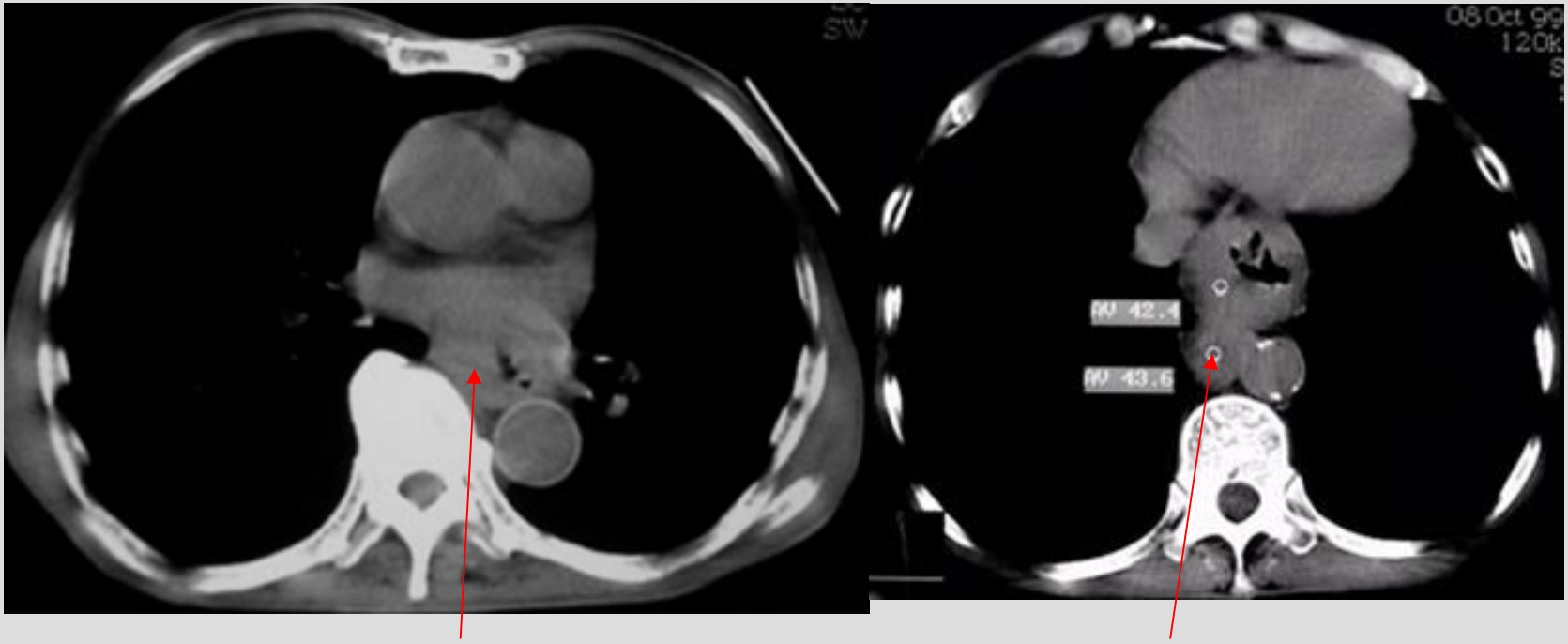
Spreading region

Lymphatic metasta

Organ metastasis

Blood supply

# Technique----CT



Esophageal carcinoma

lymphatic metastasis

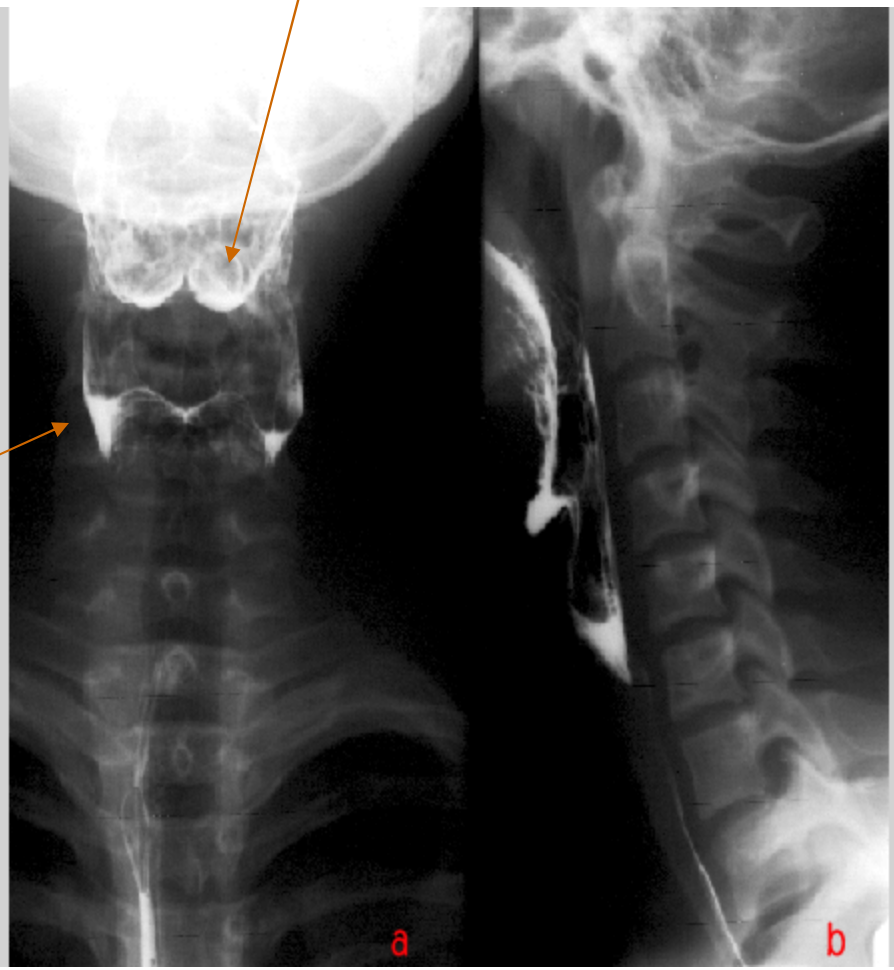
# **Upper GI series** (normal appearance)

- Pharynx —— Epiglottis、Sinus piriformis
- Esophagus ——It is continuous with the the pharynx at the level of the C6 vertebra and connects to the cardia of the stomach. It has longitudinal fold and 25-30 cm long and 2~3cm wide.
- Three parts：Cervical, Thoracic, and Abdominal parts.
- Three impression: aortic arch, left bronchus， left atrium
- Two sphincter ： the upper and lower sphincter (cardiac sphincter)

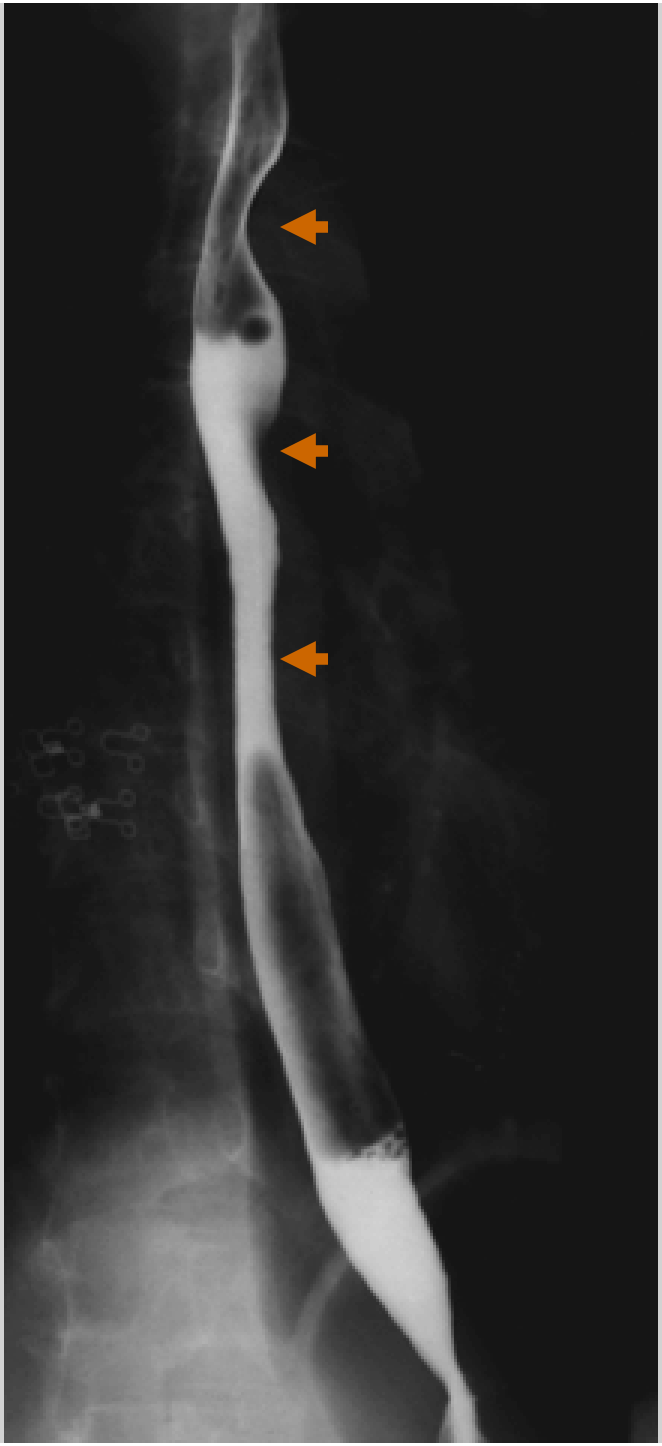
会厌 (cavity upon epiglottis)

梨状窝

Sinus Piriformis




正常咽部造影:
正位相示两侧会厌谿和其外下方的梨状窝（a）；侧位相示会厌谿在前上方，梨状窝在后下方（b）



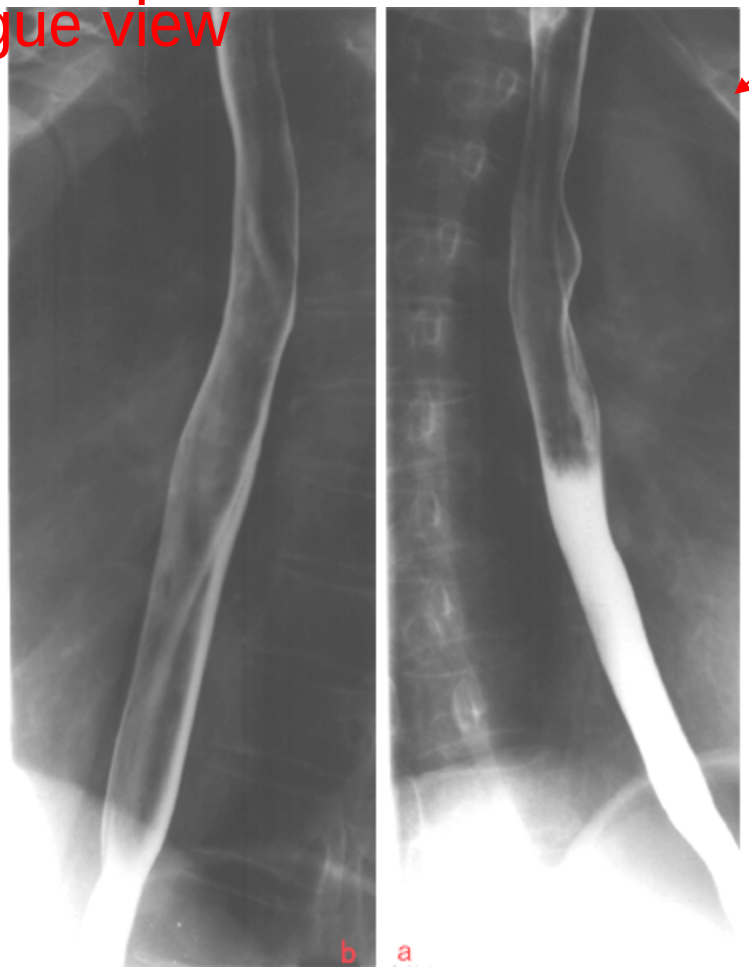
Right anterior obligue view

食管压迹和贲门：

右前斜位食管前缘由上至下显示三个压迹，分别为主动脉弓压迹，左主支气管压迹和左心房压迹。食管远端最窄处为贲门。

left anterior obligue view

Right anterior obligue view

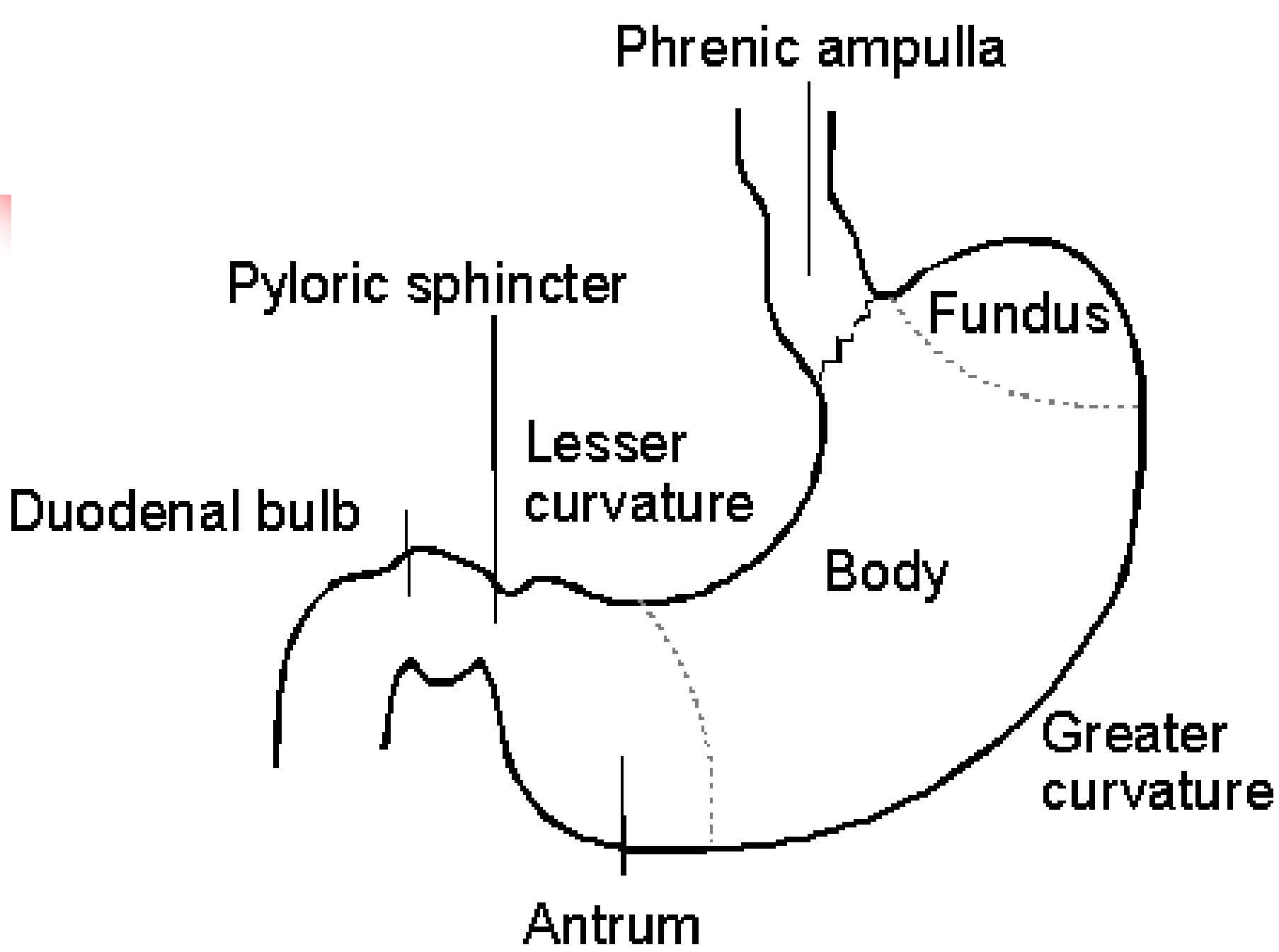


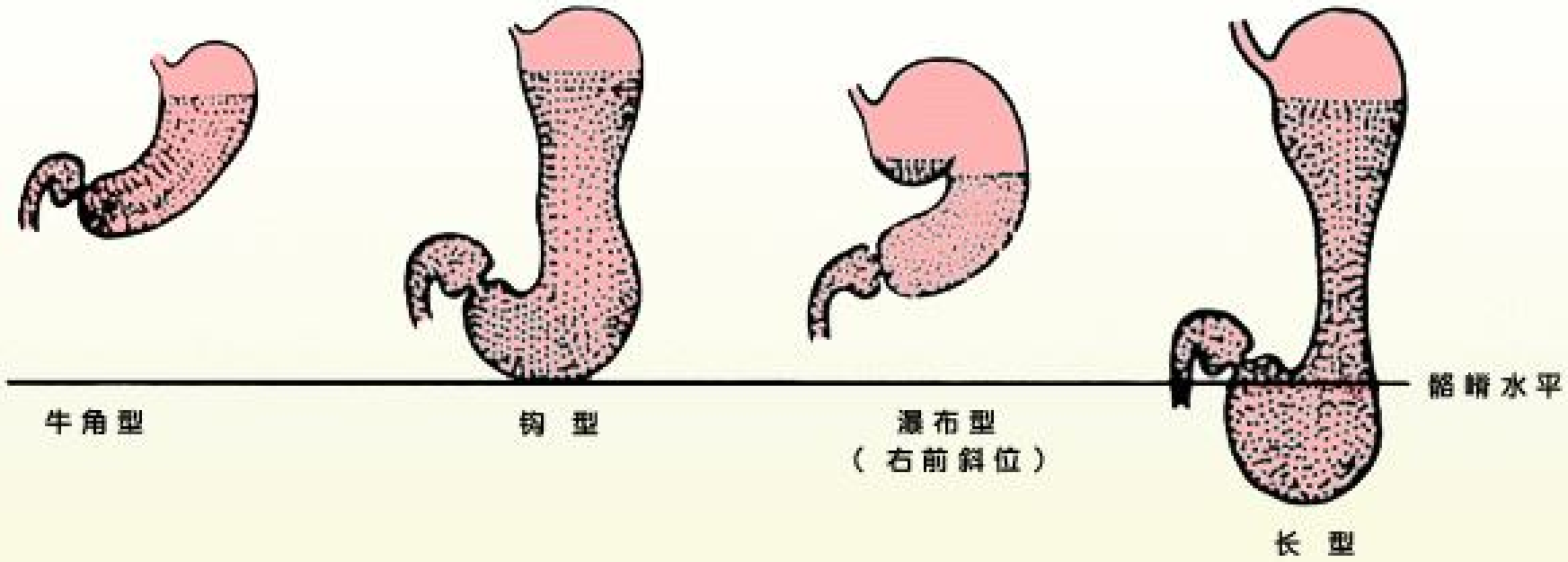

食管压迹：
a.右前斜位相食管前缘由上至下示三个浅弧状压迹，分别为主动脉结，左主支气管和左心房压迹。b.左前斜位则不能显示。

# Normal X-ray appearance of the Gastri

# Gastri

- The stomach is divided into four sections, each of which has different cells and functions. The sections are:
- Cardia The upper part of the stomach.
- Fundus Formed by the upper curvature of the organ.
- Body or corpus  The main, central region.
- Pylorus or antrumThe lower section of the organ


Phrenic ampulla
Pyloric sphincter
Fundus
Lesser curvature
Duodenal bulb
Body
Greater curvature
Antrum




Steerhorn’ Type

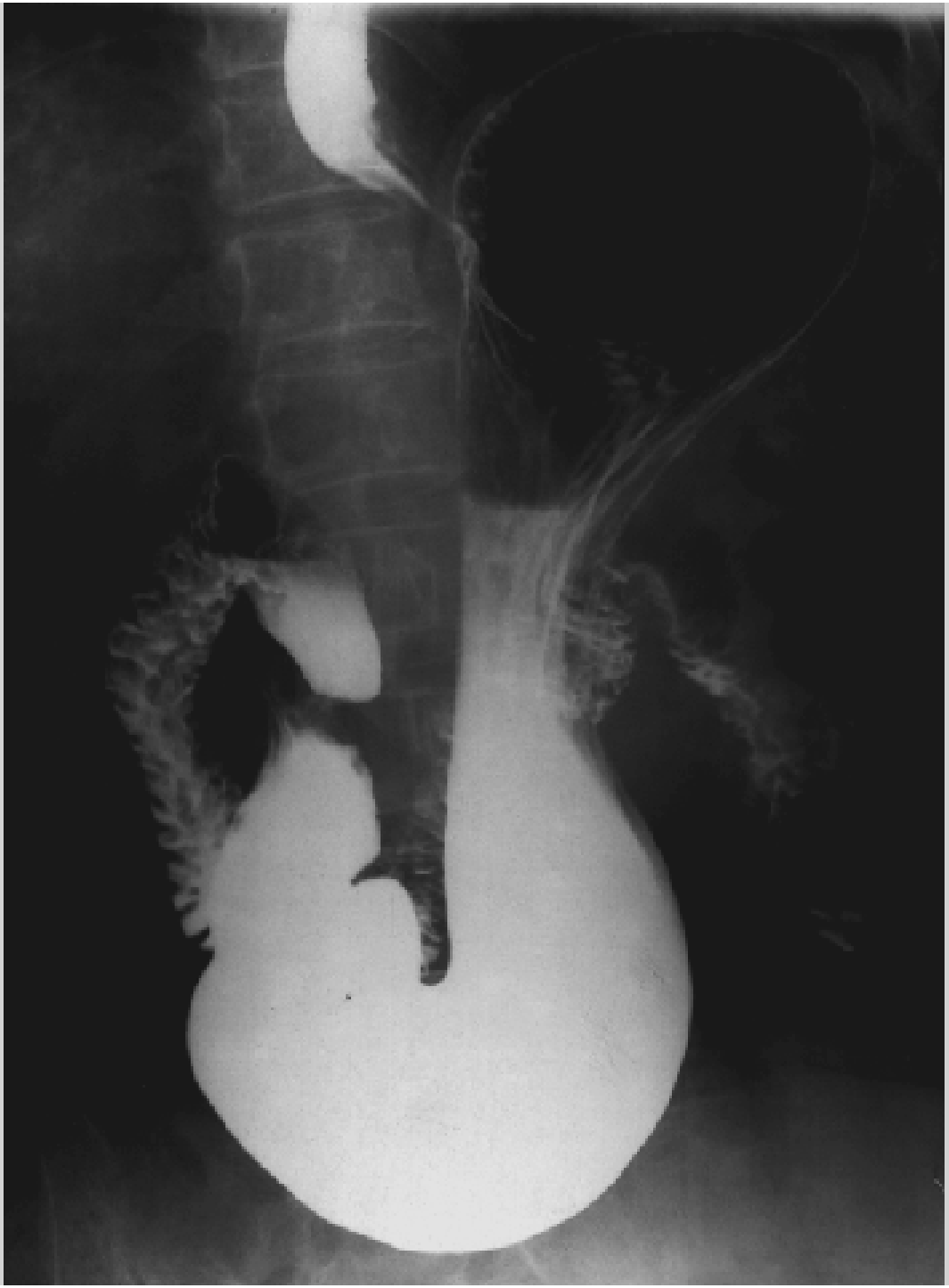
J-shaped

**Cascade**

Fishhook Type

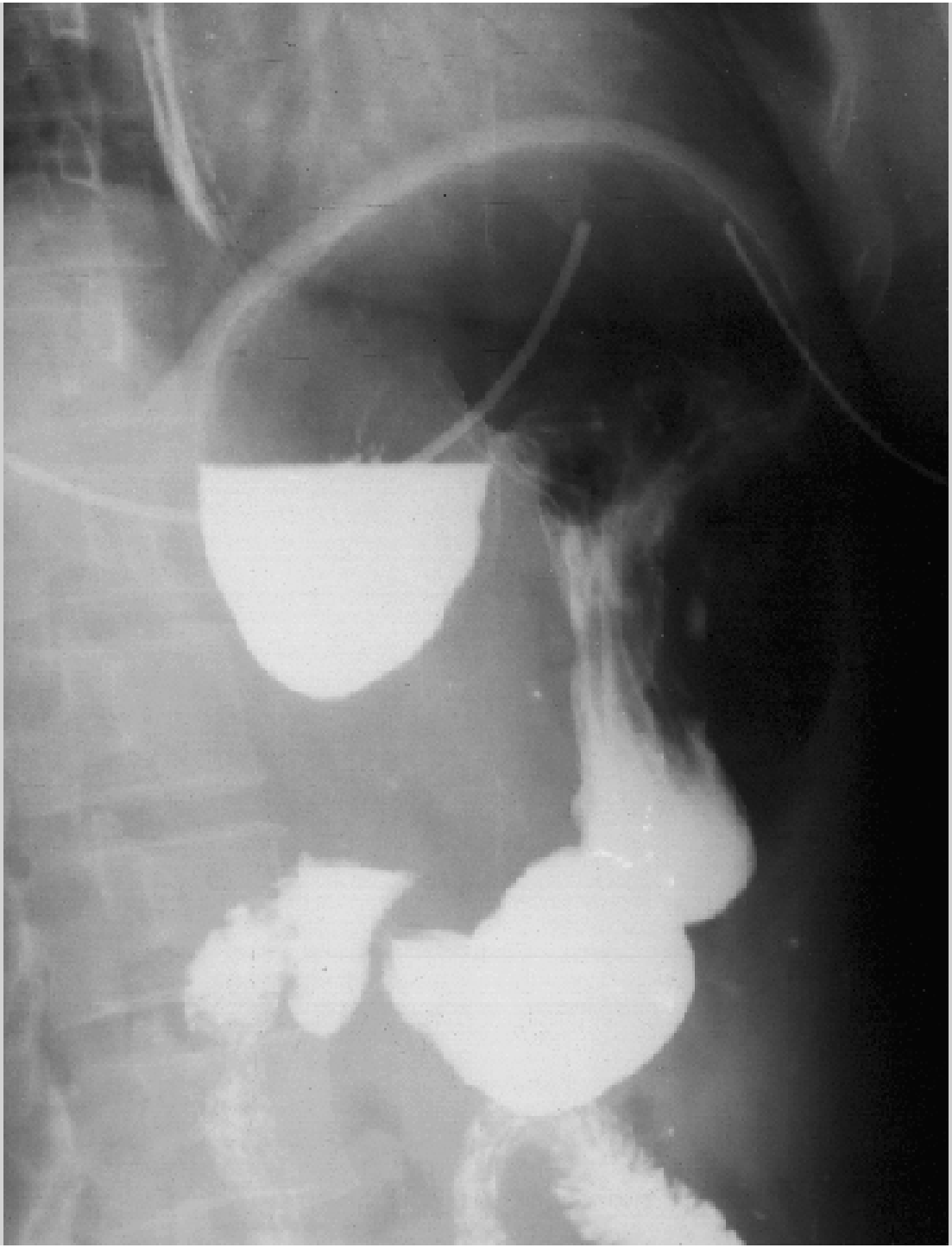
钩型胃

Fish-hook Type



长型胃

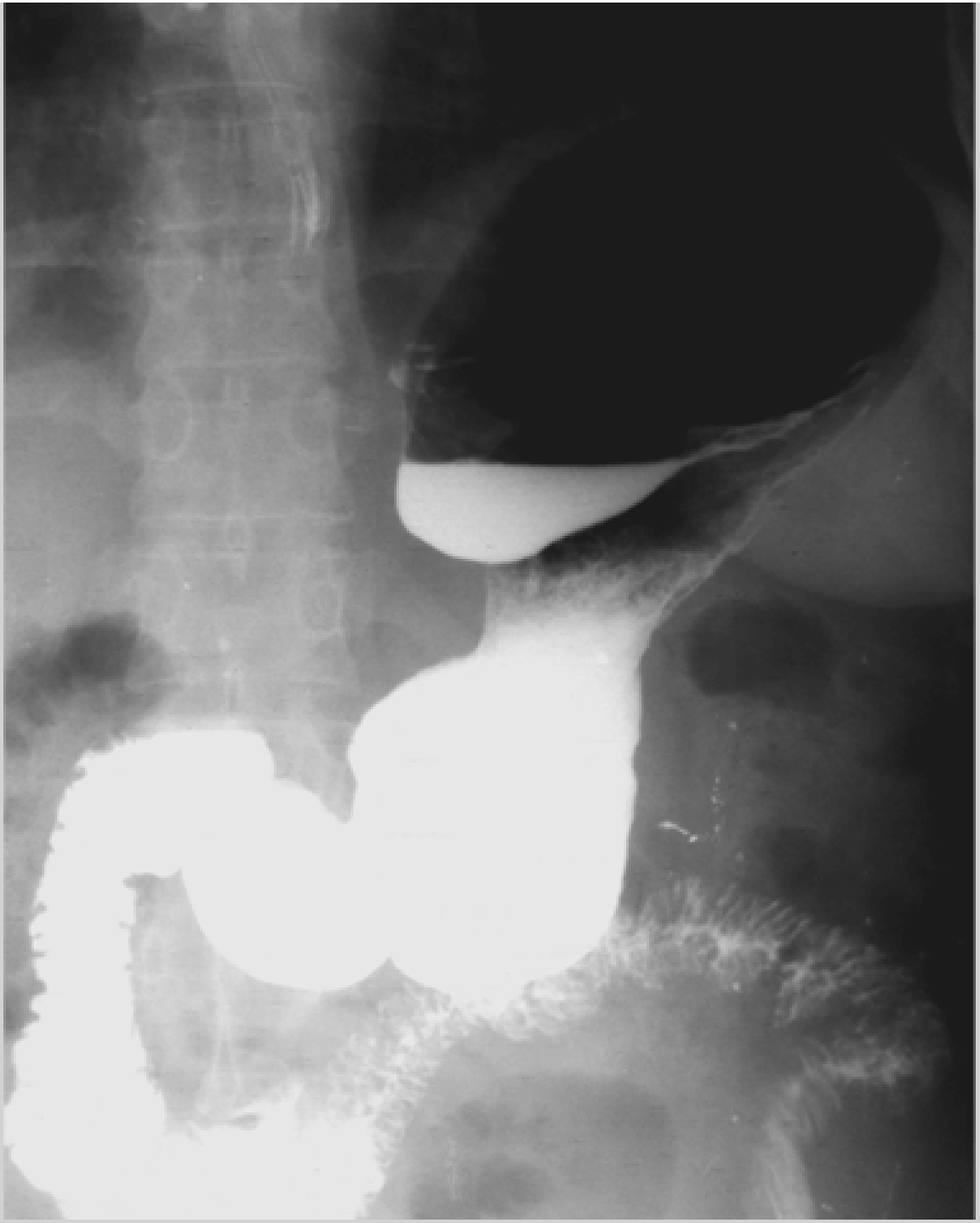
Long type

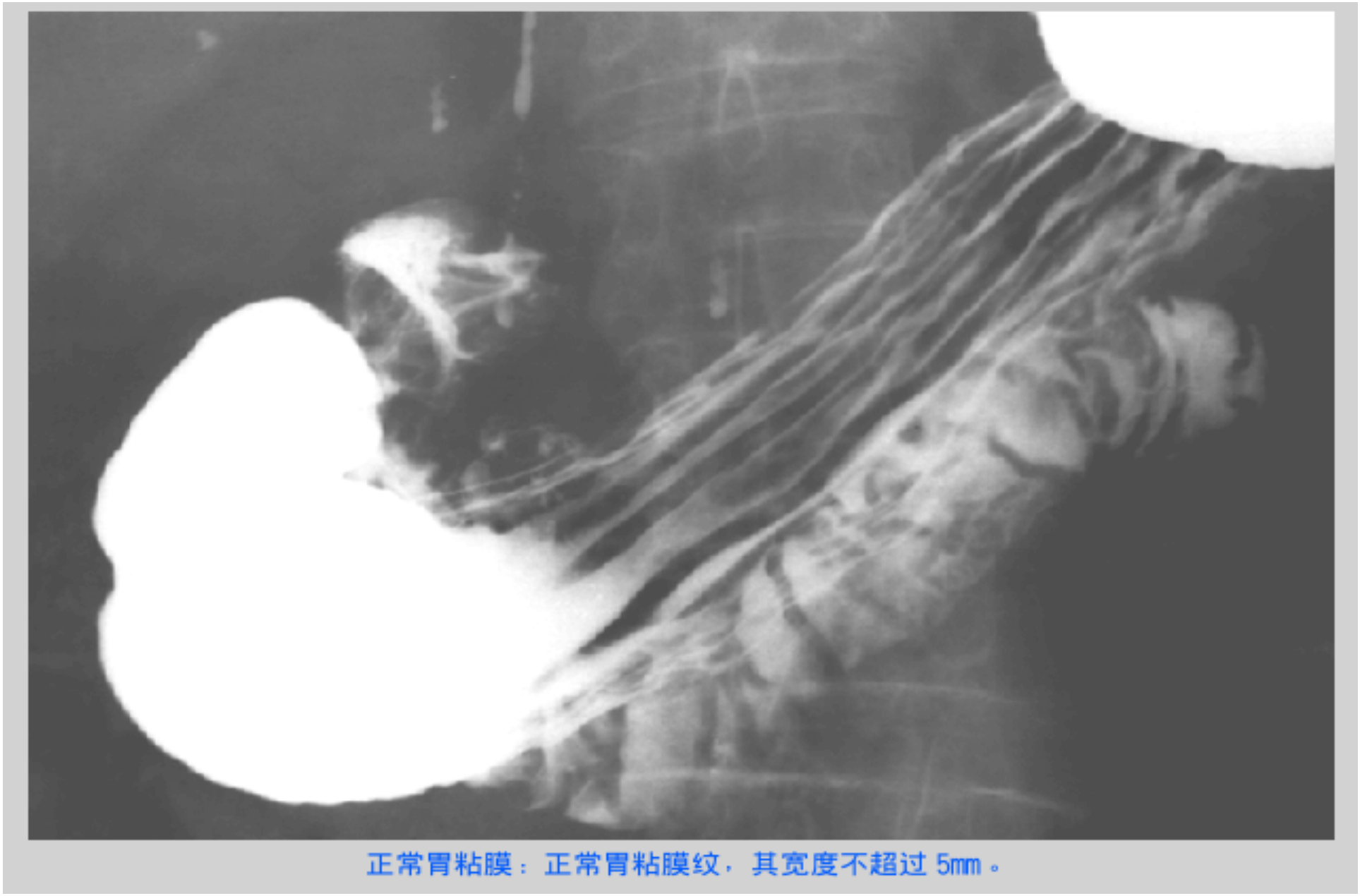


cascade

瀑布型胃：

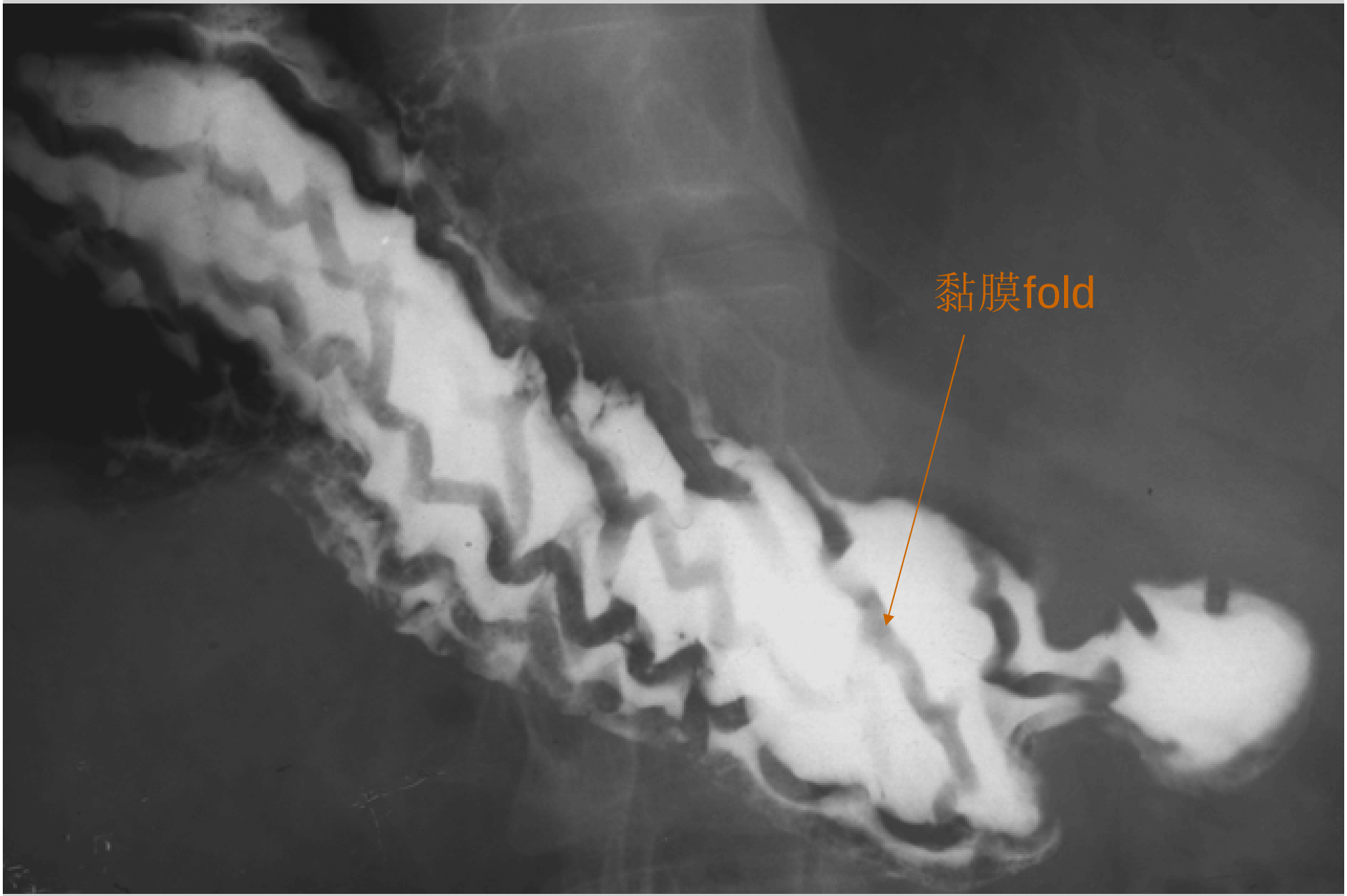
胃底后倾呈囊袋状，胃体较小，张力较高。造影剂先进入胃底，然后再溢入胃体。





正常胃粘膜：正常胃粘膜纹，其宽度不超过 5mm。

牛角型胃 horn’ type



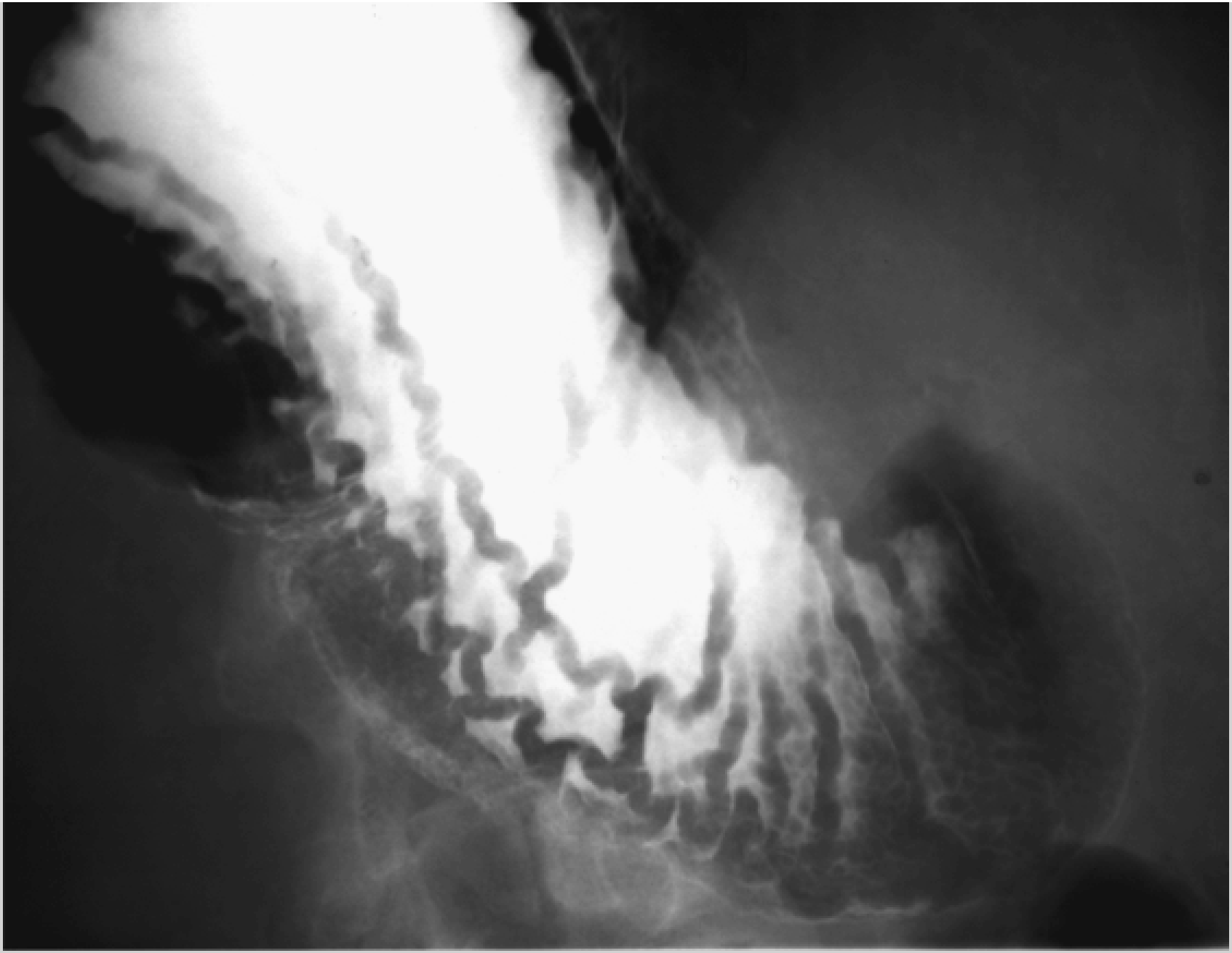

胃前壁粘膜皱襞：俯卧位前襞粘膜皱襞充分显示，连续完整，略迂曲。

Normal gastric area

Grid structure

正常胃小区：

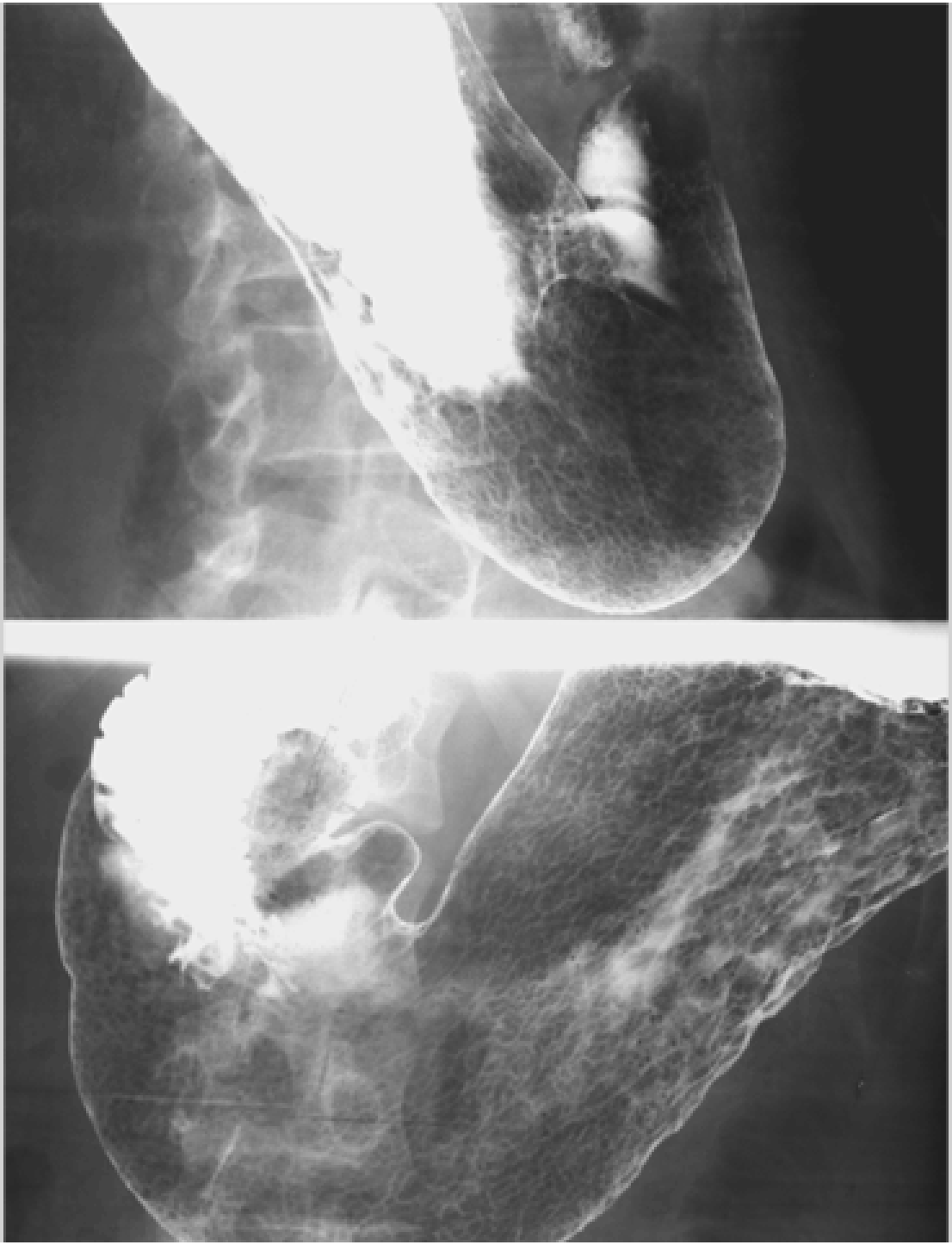
胃粘膜表面的网格状结构。



前壁胃小区：胃窦前壁胃小区与正常粘膜皱襞并存。

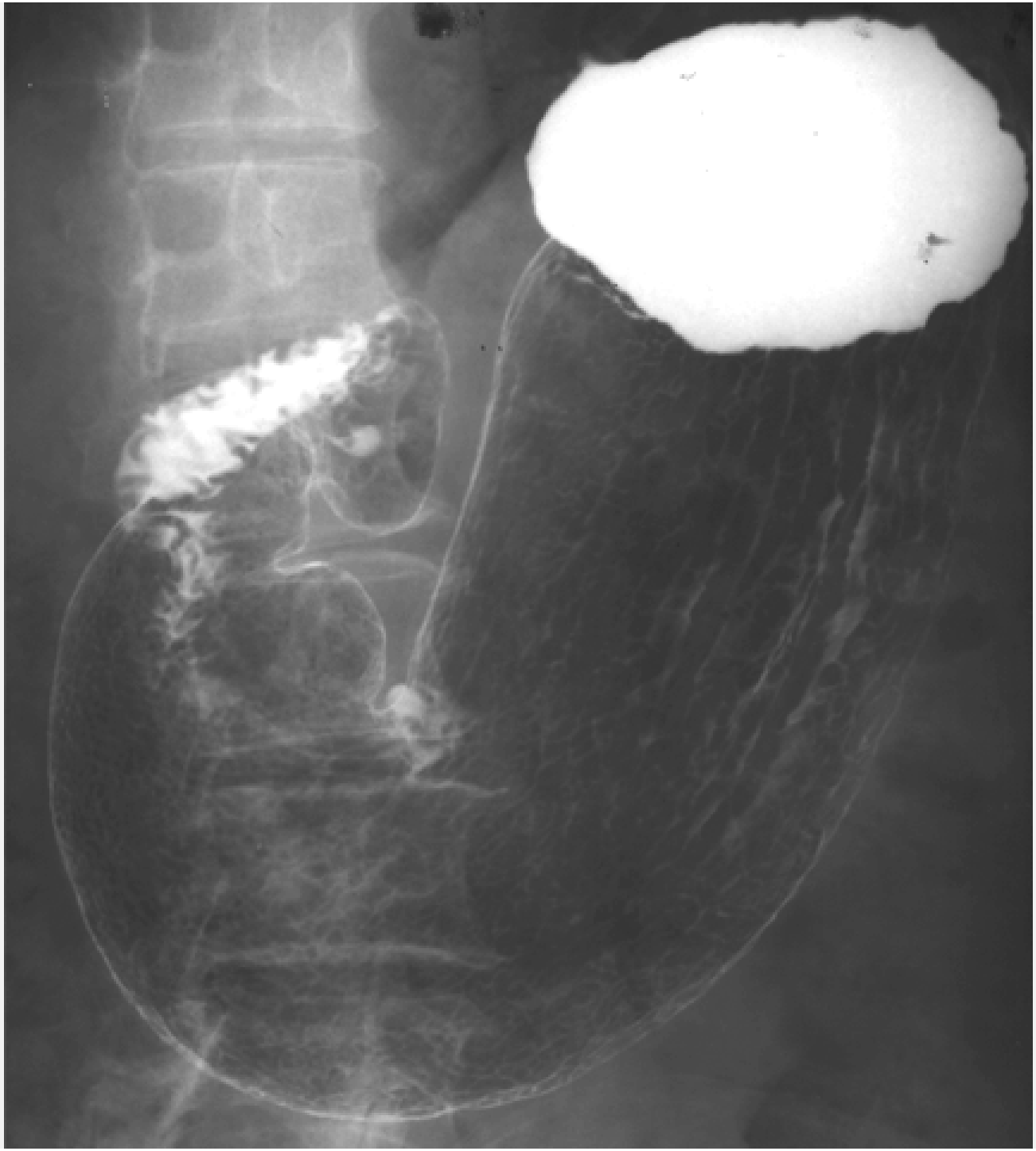
area gastrica

正常胃小区：
　　胃窦前壁和胃体后壁胃小区显示充分，呈细小网格状结构。



胃小区：

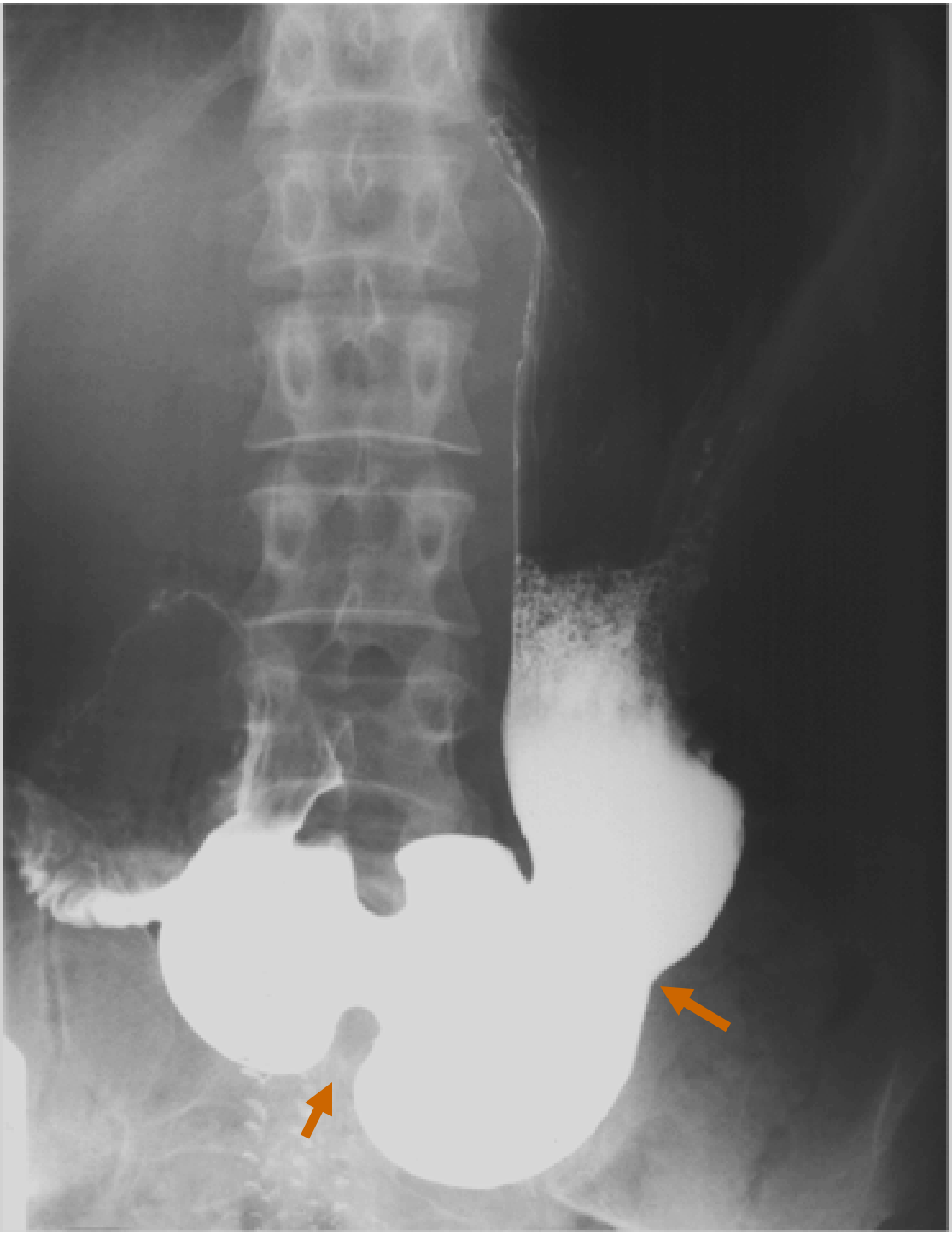
胃窦部粘膜面显示为细小网格状结构，呈类圆形透光影为胃小区，其周围线状钡影为胃小沟。



Peristaltic wave

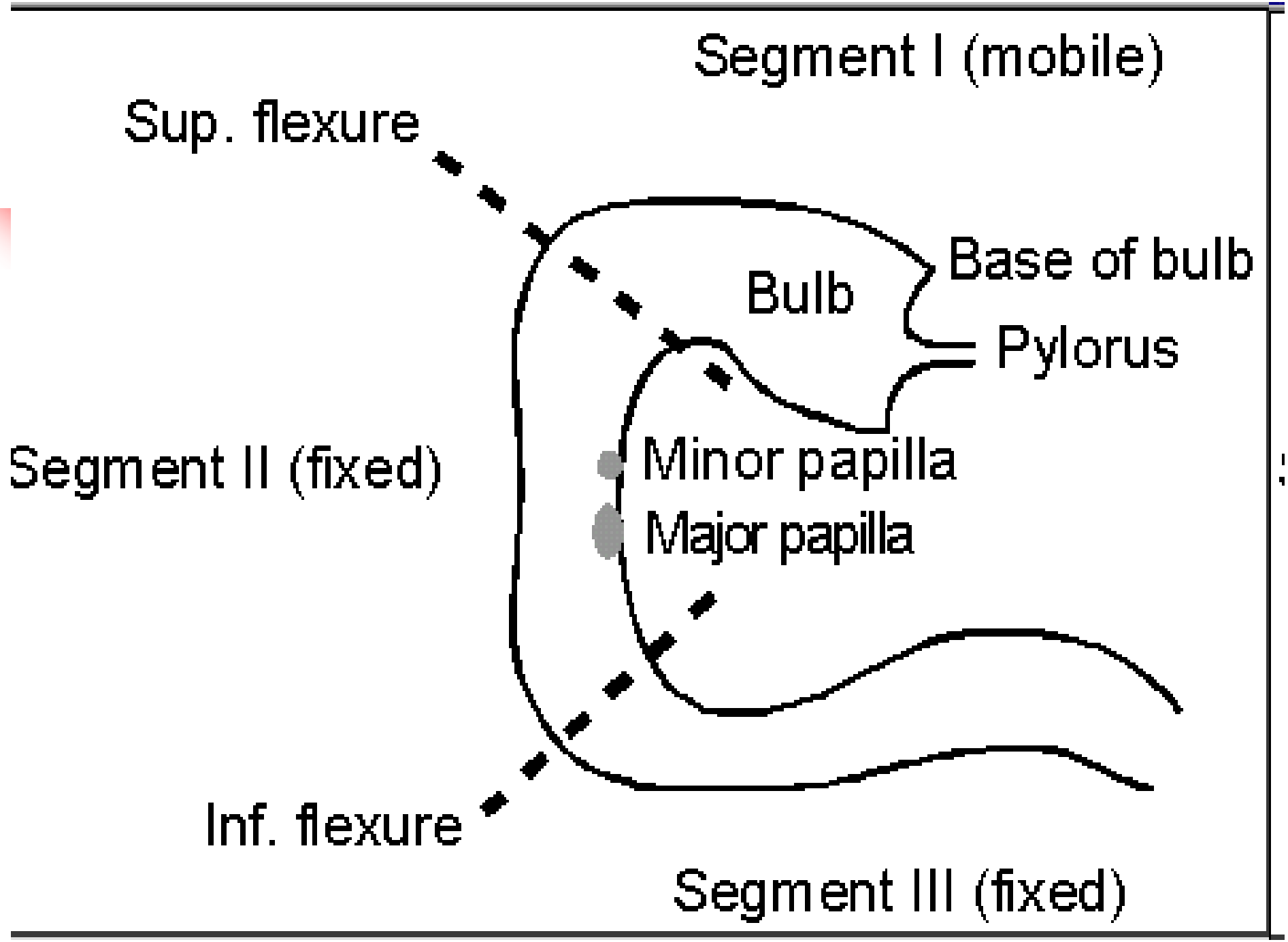
胃蠕动波：

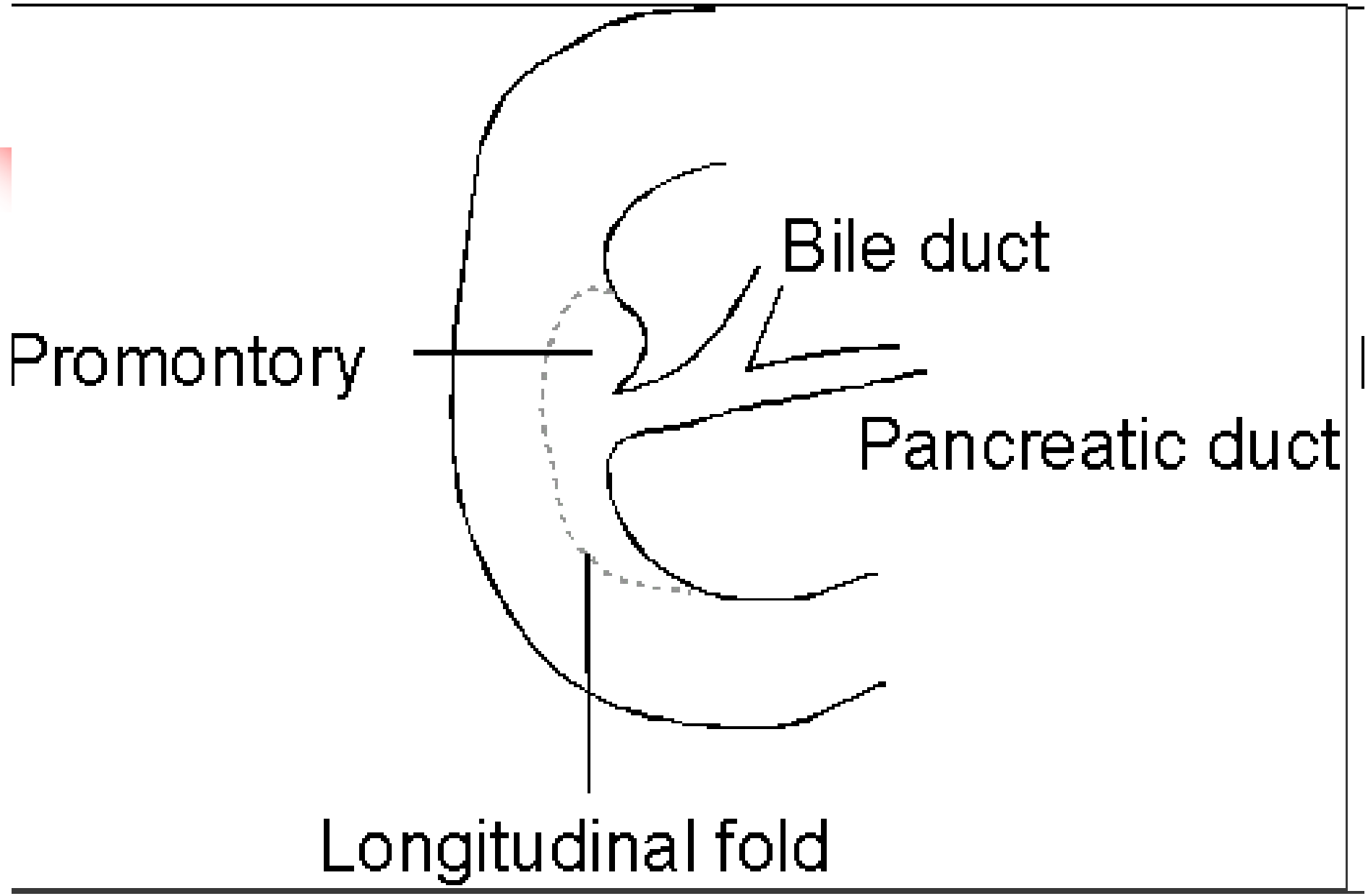
胃体下部大弯示有较浅蠕动波，胃窦之前胃腔显示对称性蠕动波。

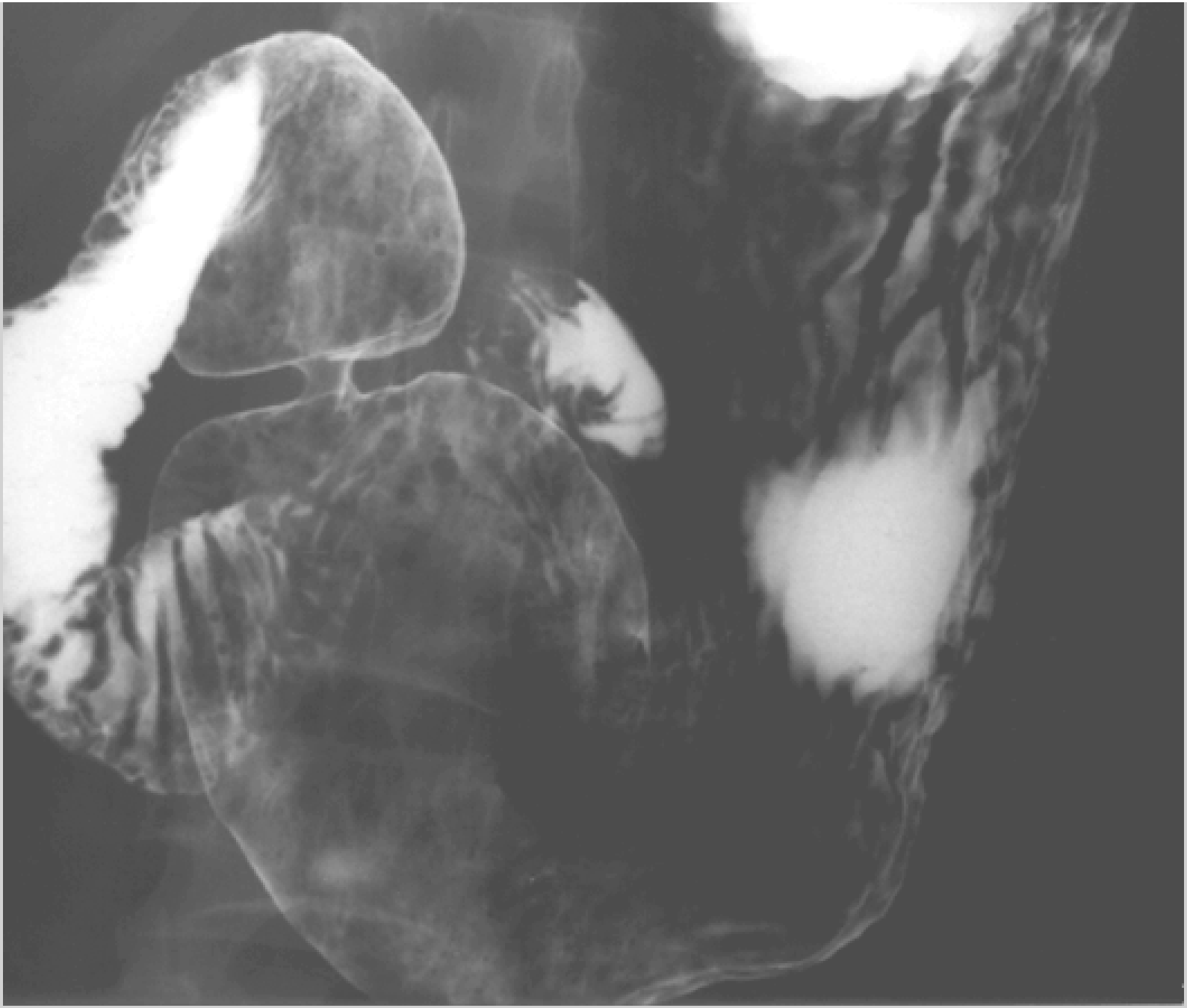


# X-ray anatomy of the duodenum

- The duodenum is divided into four sections for the purposes of description. The first three sections form a "C" shape. Lies between the 1-3 lumbar vertebra
- Duodenal bulb, descending, horizontal and ascending part
- Papilla located on the descending part and 1.5cm diameter
- Longitudinal fold in the bulb, and Feathery fold as jejunum in the other sections


Segment I (mobile)
Sup. flexure
Base of bulb
Bulb
Pylorus
Segment II (fixed)
Minor papilla
Major papilla
Inf. flexure
Segment III (fixed)

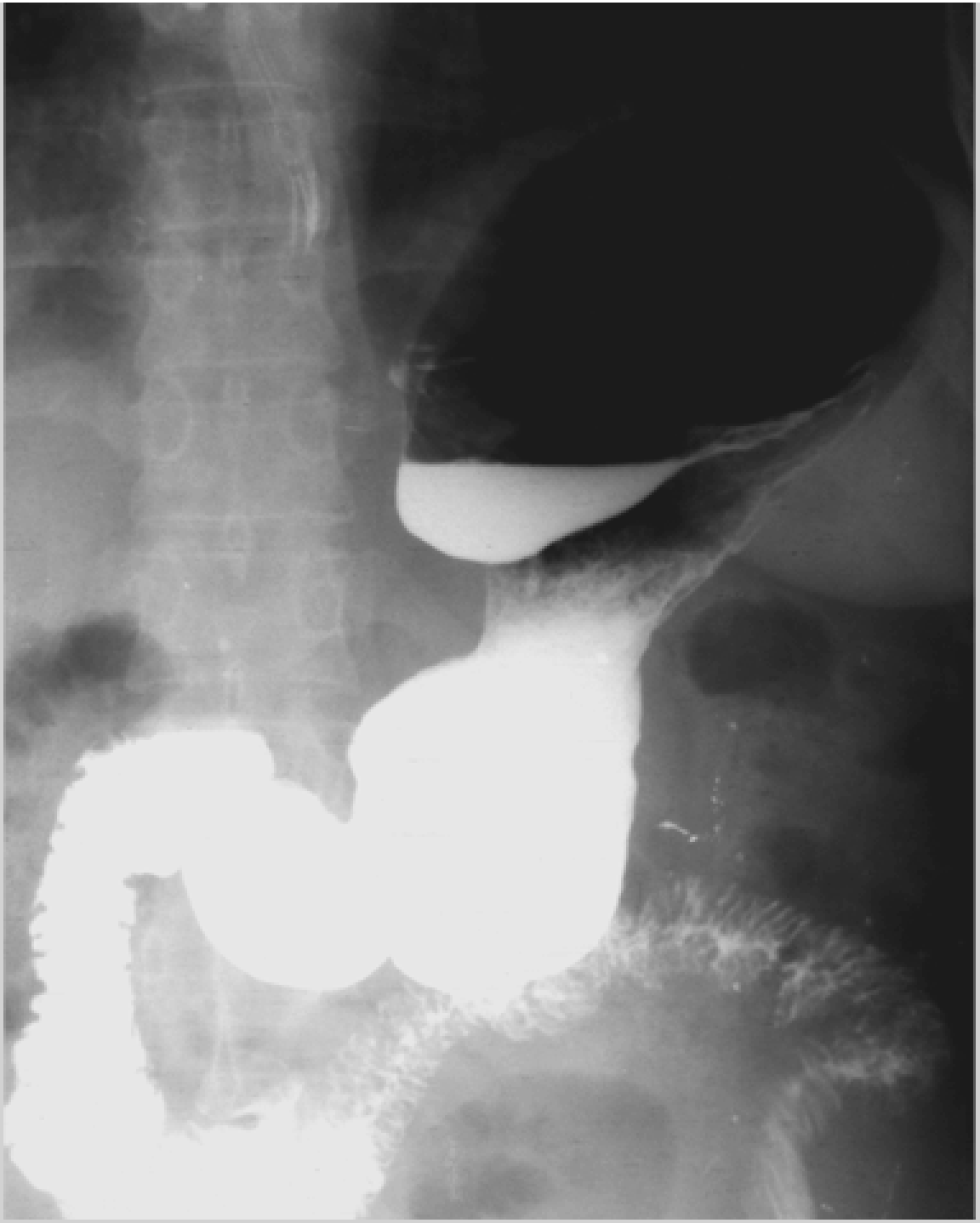

Bile duct
Promontory
Pancreatic duct
Longitudinal fold

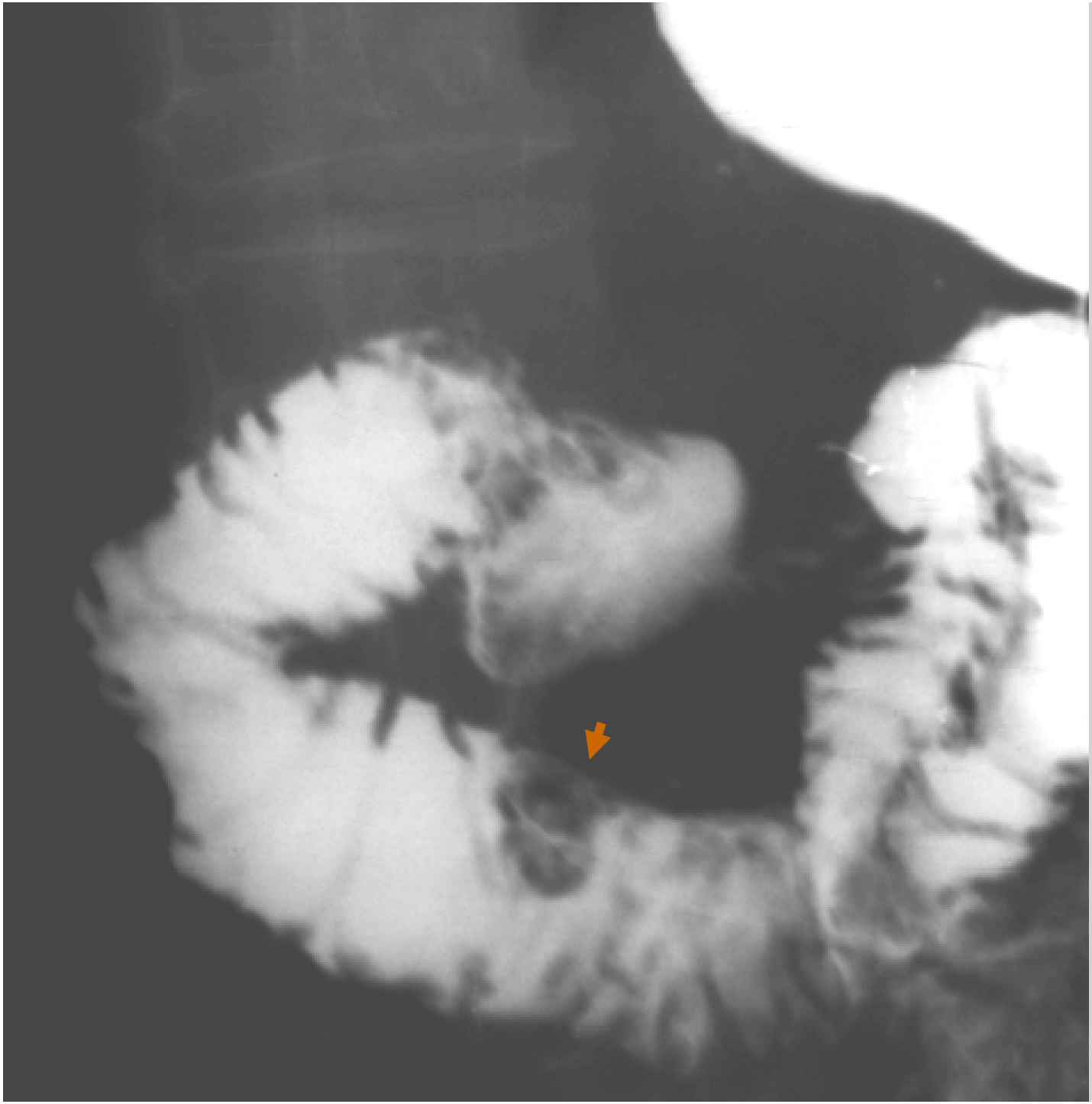


幽门及十二指肠：幽门清晰，十二指肠球部、降部及升部均显示。

瀑布型胃：

胃底后倾呈囊袋状，胃体较小，张力较高。造影剂先进入胃底，然后再溢入胃体。





## Papilla

十二指肠乳头：
　　十二指肠第二段内侧示一类圆形透光影－十二指肠乳头。

# X—ray anatomy of the small intestine

Mucosal fold——feathery，circular

6 sections：

（1）duodenum

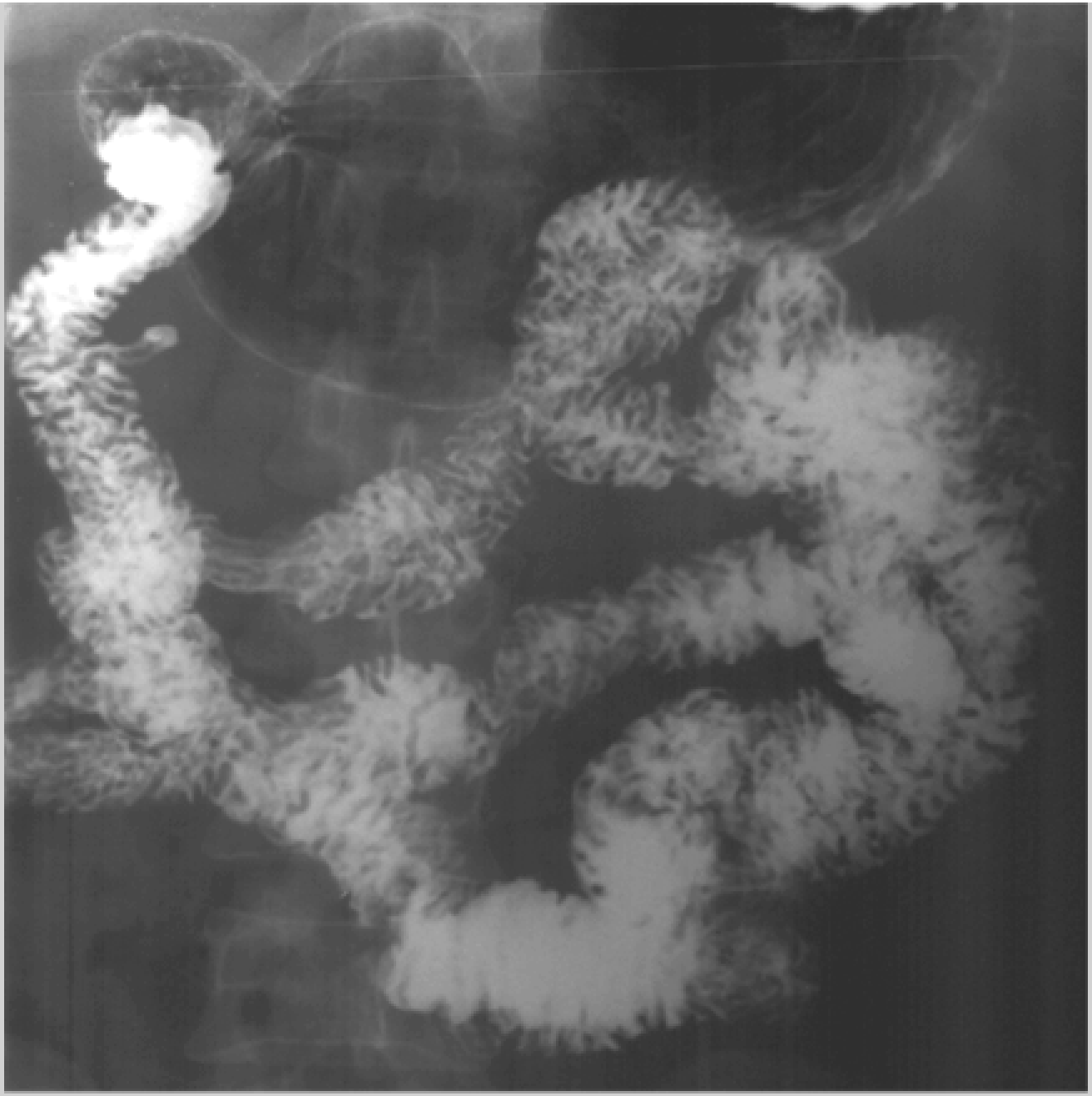
（2）proximal jejunum，on the left upper abdomen

（3）distal jejunum ，on the left middle abdomen

（4） proximal ileum，on the right middle abdomen

（5）（6）distal ileum，on the right lower abdomen or pelvis cavity

emptying time: 2~6 hours



十二指肠、空肠粘膜像：小肠粘膜皱襞呈羽毛状影像。（十二指肠降部示一小憩室影）

1
2
3
4
5
6

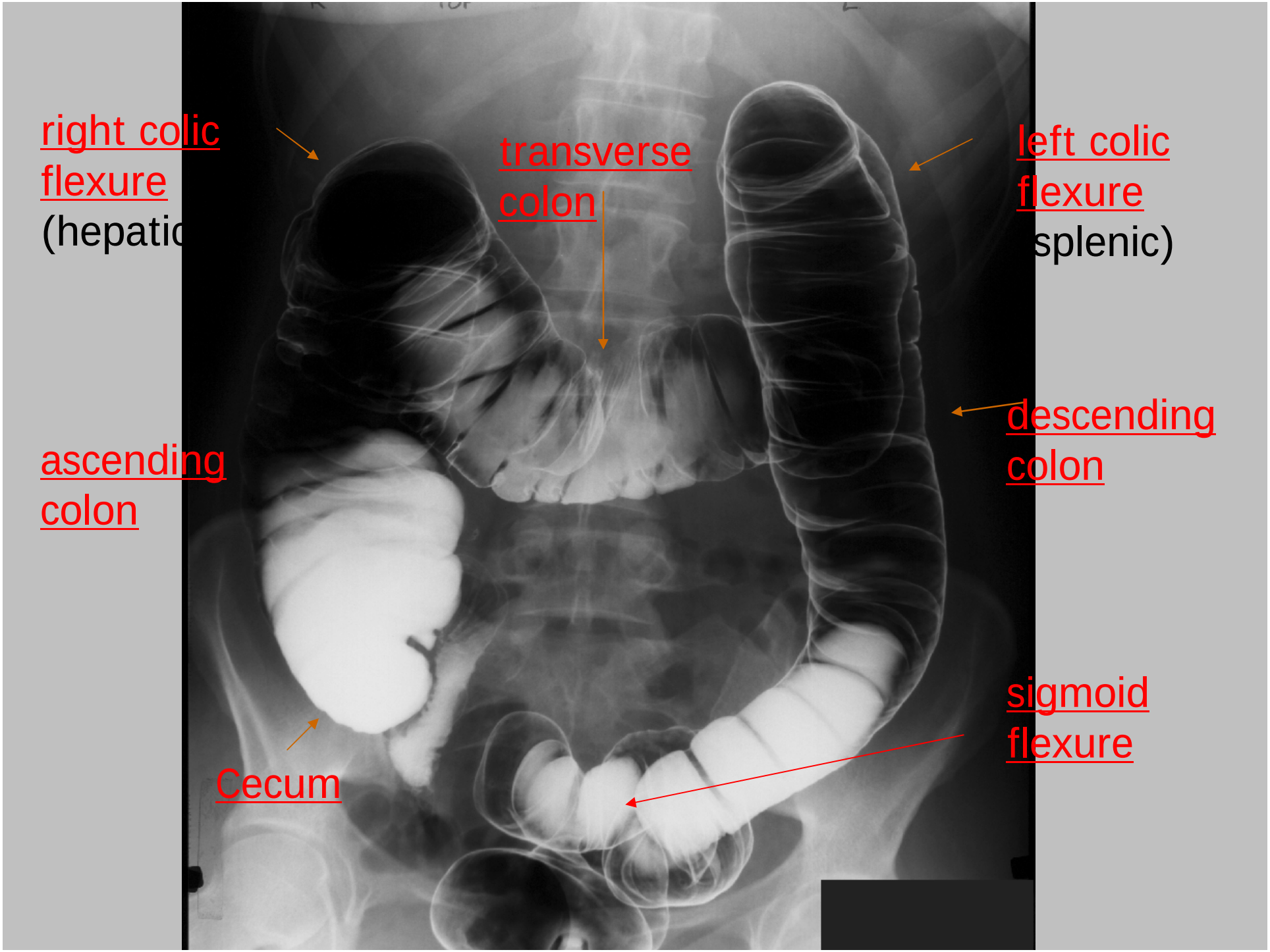
2½ hrs.

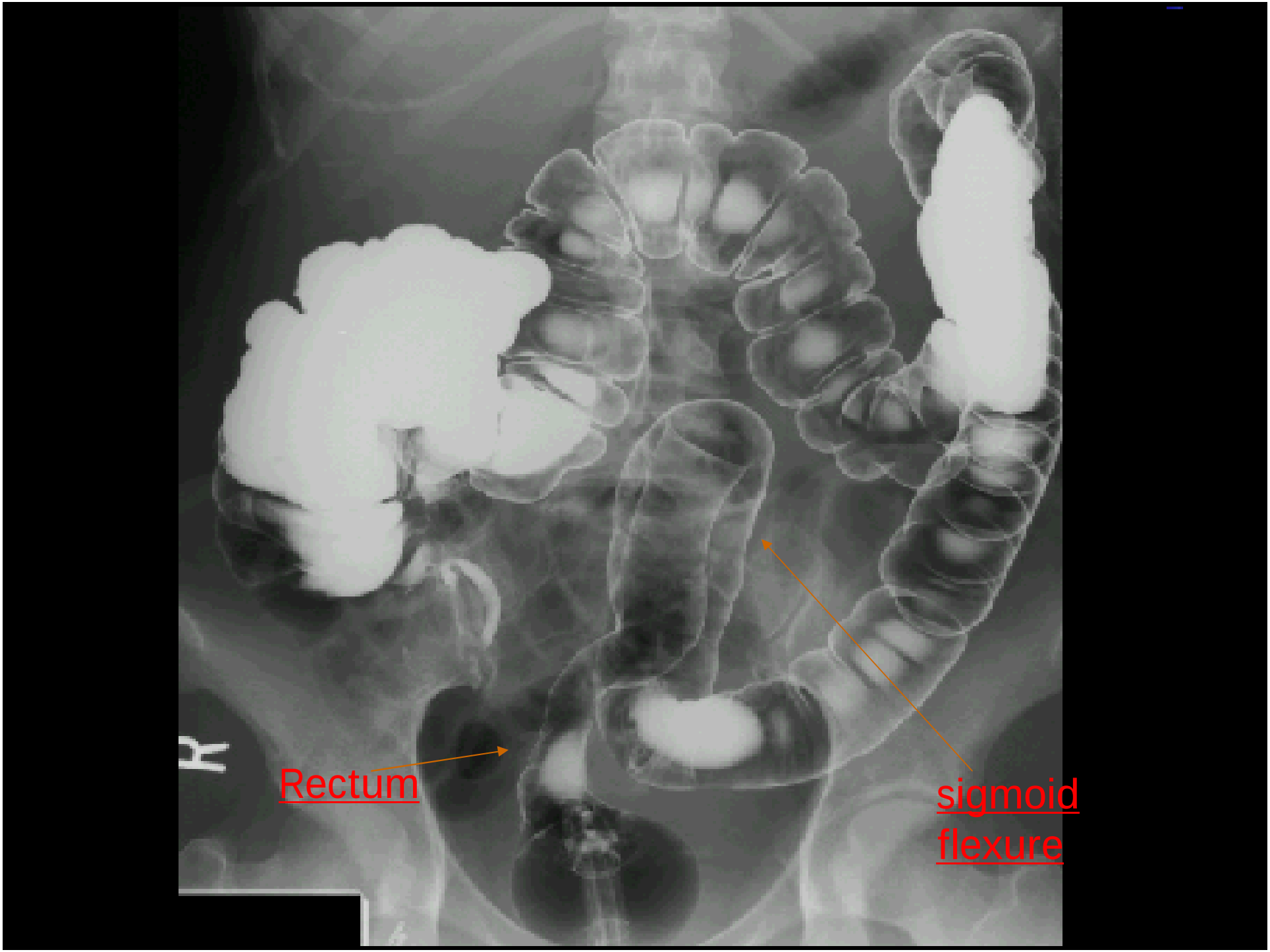
# X—ray anatomy of the large intestine

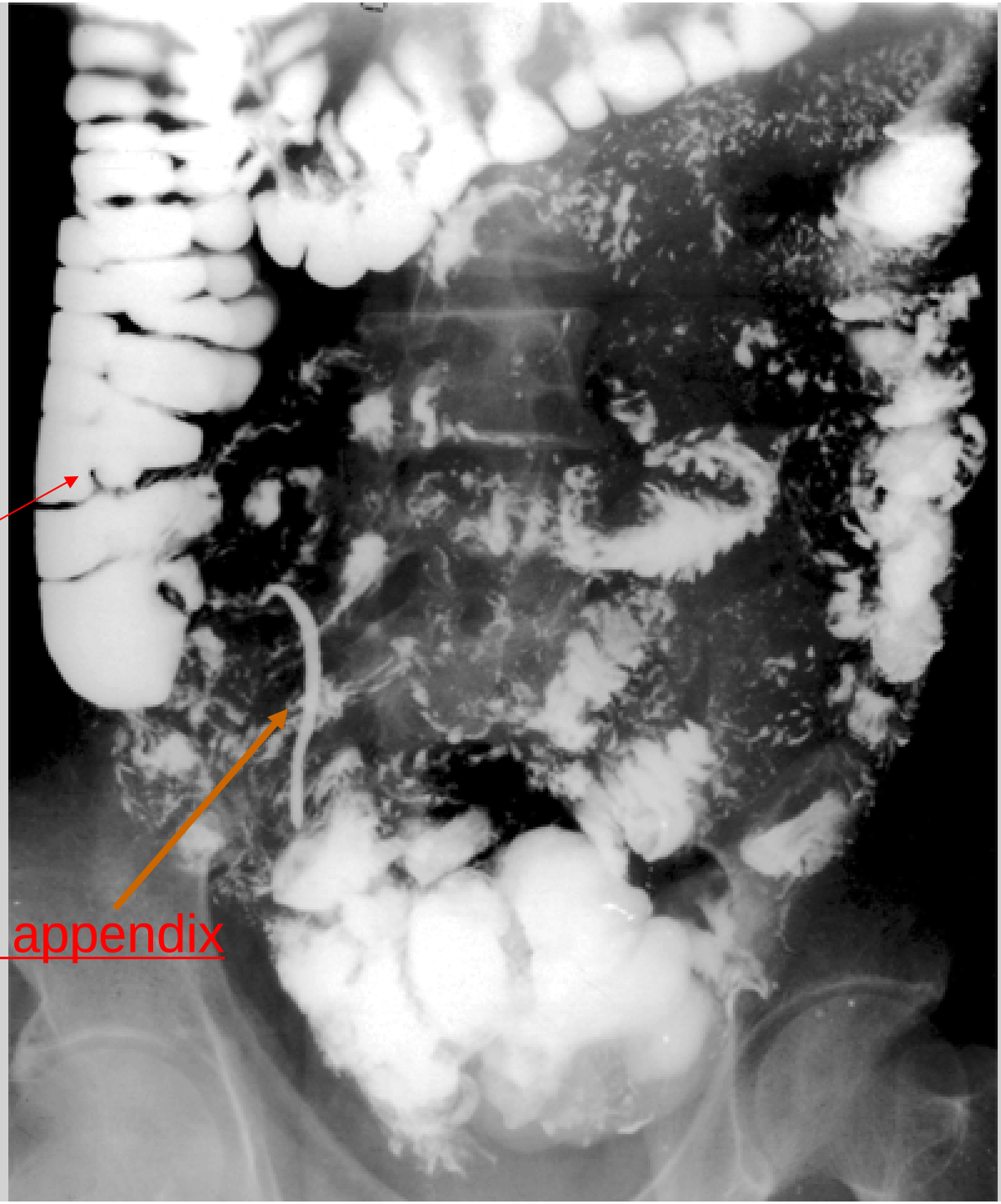
Large intestine, which has three parts:

- Cecum (the vermiform appendix is attached to the cecum).
- Colon (ascending colon, transverse colon, descending colon and sigmoid flexure)
- Rectum

haustra， mucosal fold——longitudinal、transversal and oblique


right colic flexure
(hepatic
transverse colon
left colic flexure
splenic)
descending colon
ascending colon
sigmoid flexure
Cecum


Rectum
sigmoid flexure




结肠袋和阑尾：

盲、升、横结肠充盈造影，结肠袋丰富，阑尾充钡而显影。

钡剂灌肠检查，分别显示充盈相和粘膜相

大肠双对比造影：
升、横、降结肠轮廓线清晰，结肠袋丰富。

Sigmoid colon

大肠双对比造影：
以乙状结肠为中心的大肠双对比造影像。

大肠双对比造影：

乙状结肠及降结肠下部轮廓线完整，粘膜面清晰，结肠袋变浅接近消失。

# X-ray finding of basic pathology

## Change of the wall

1） Mound: filling defect, intraluminal mass

2） Crater: collection of barium on dependent surface

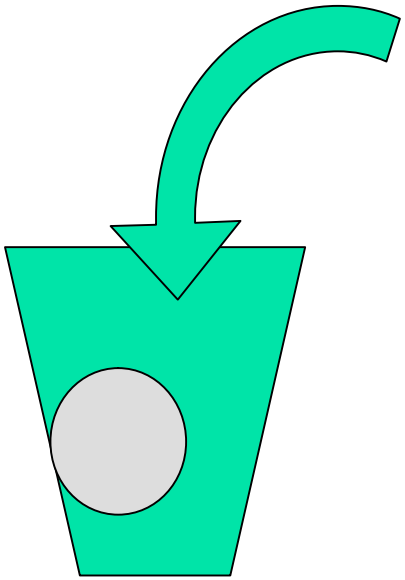
3） Thickened wall

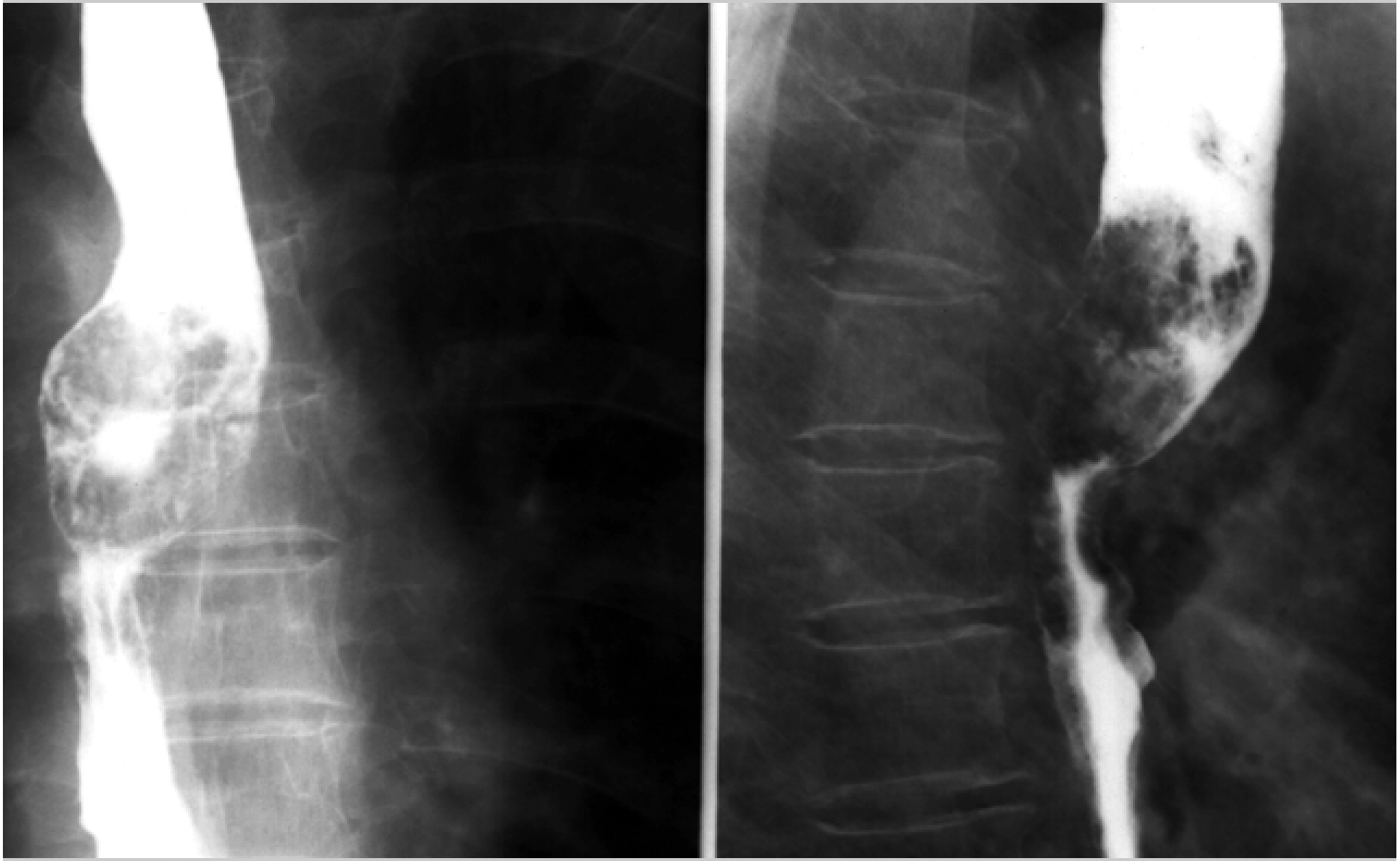
4） Rigidity: lack of distensibility

标本所见

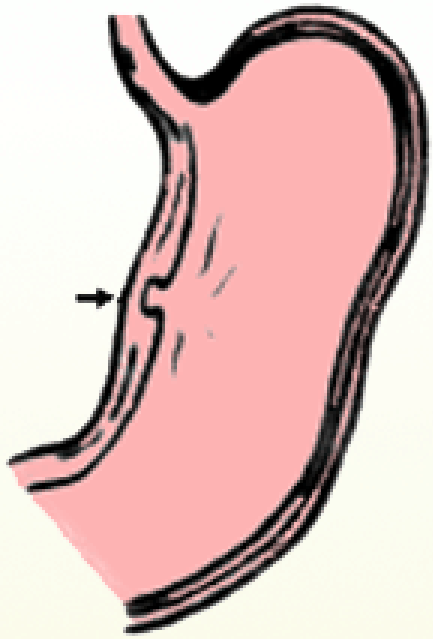
造影所见

Filling Defect





增生型食管癌：食管中所示一隆起型病变，形态不规则，呈分叶状。



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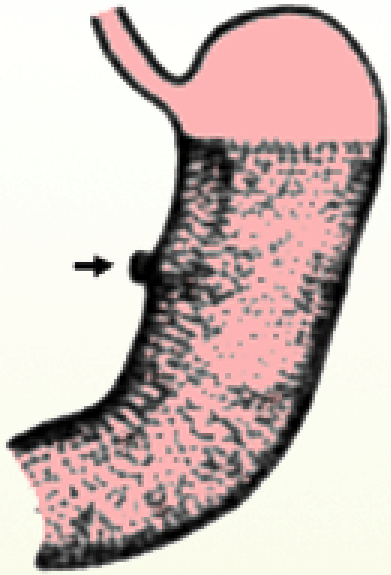
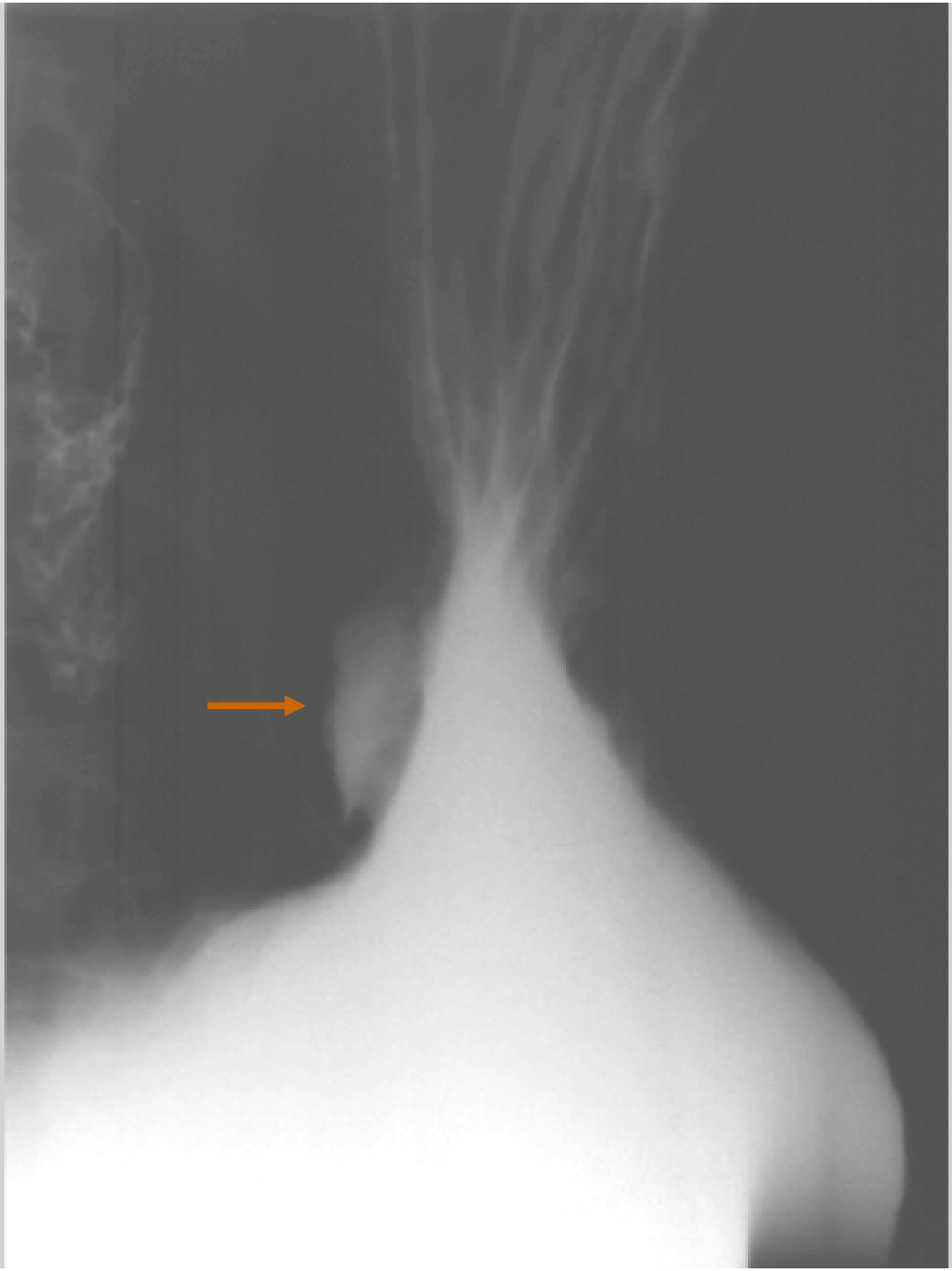


造影所见

Crater

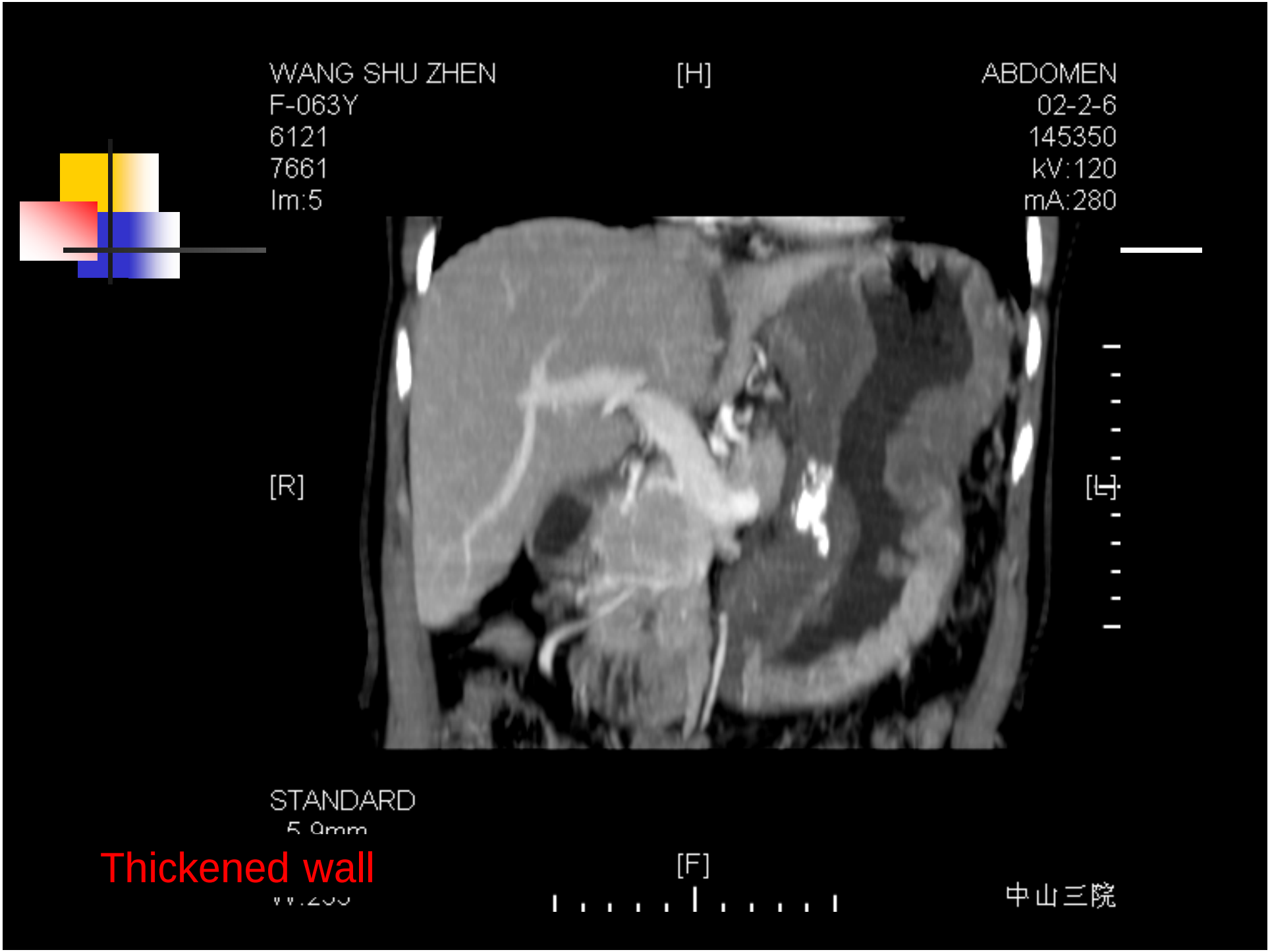
龛影：

胃体下部小弯侧溃疡龛影



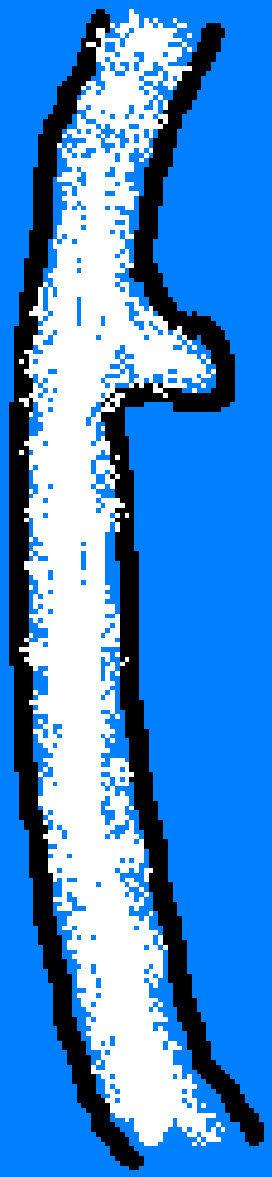
胃溃疡：

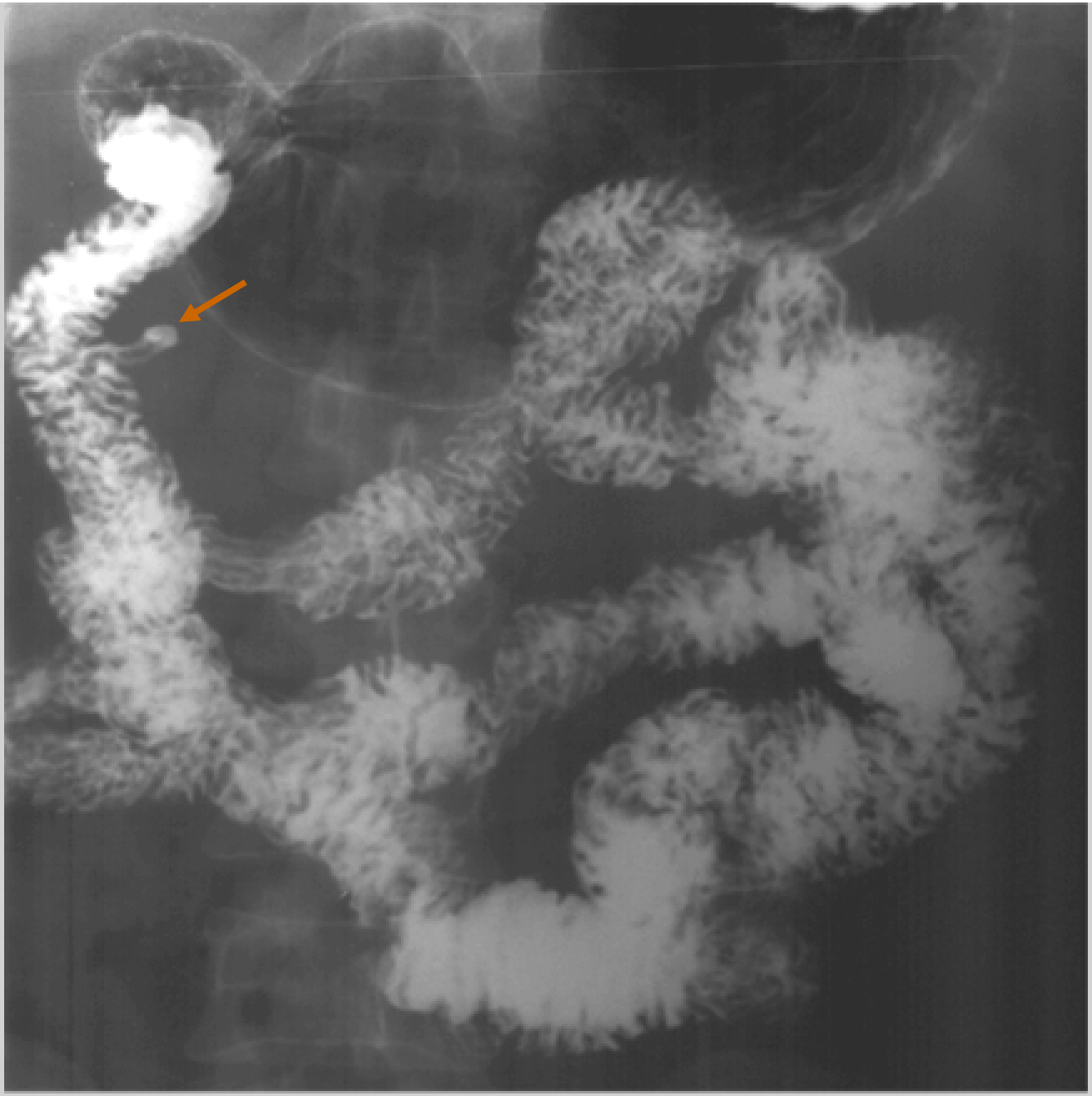
胃体下部小弯侧示一突出于胃腔外龛影，龛影大而浅，充盈相龛影口部，隐约具有较宽厚的透明带－胼胝性溃疡。




Thickened wall

憩室
diverticulum





十二指肠、空肠粘膜像：小肠粘膜皱襞呈羽毛状影像。（十二指肠降部示一小憩室影）

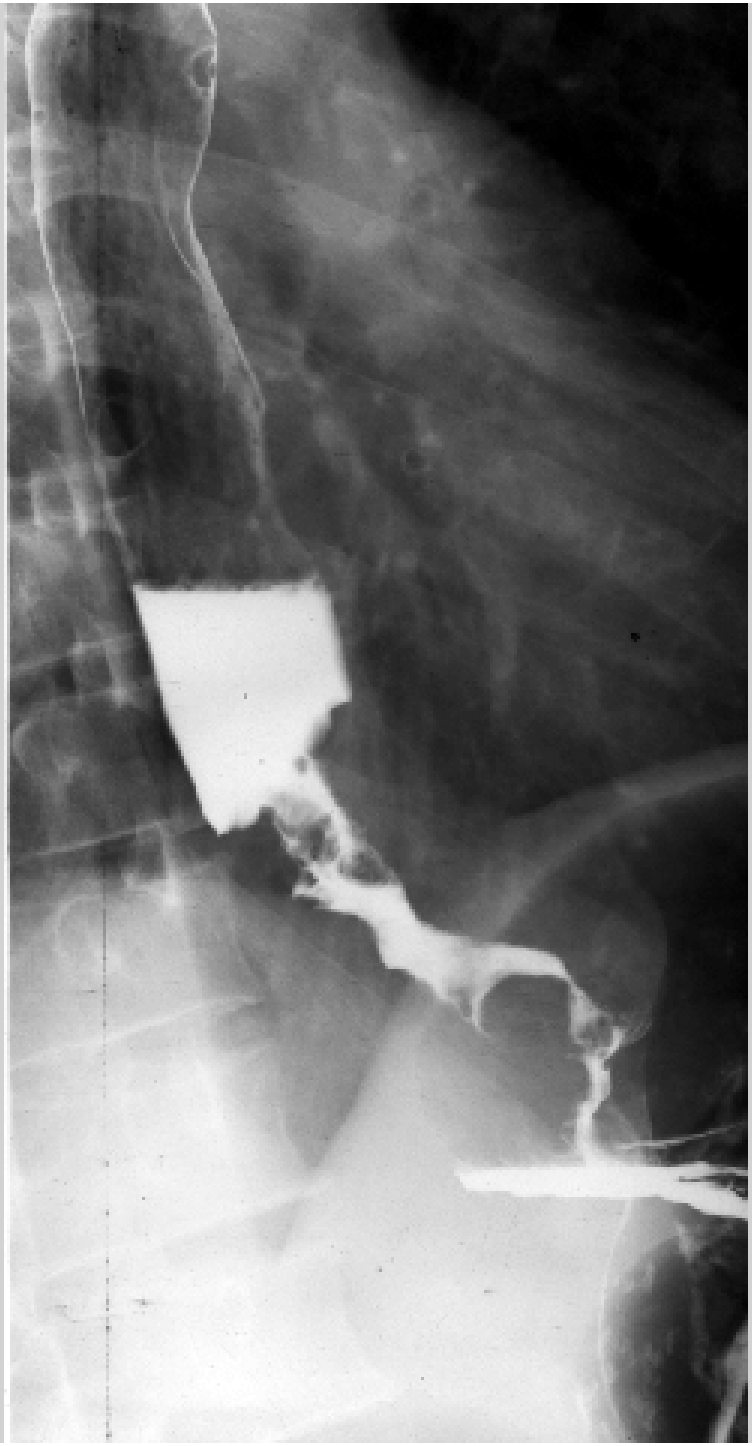
# Change of the mucosal folds

1.粘膜破坏 destruction of mucosa

2.粘膜增粗 thickening mucosa

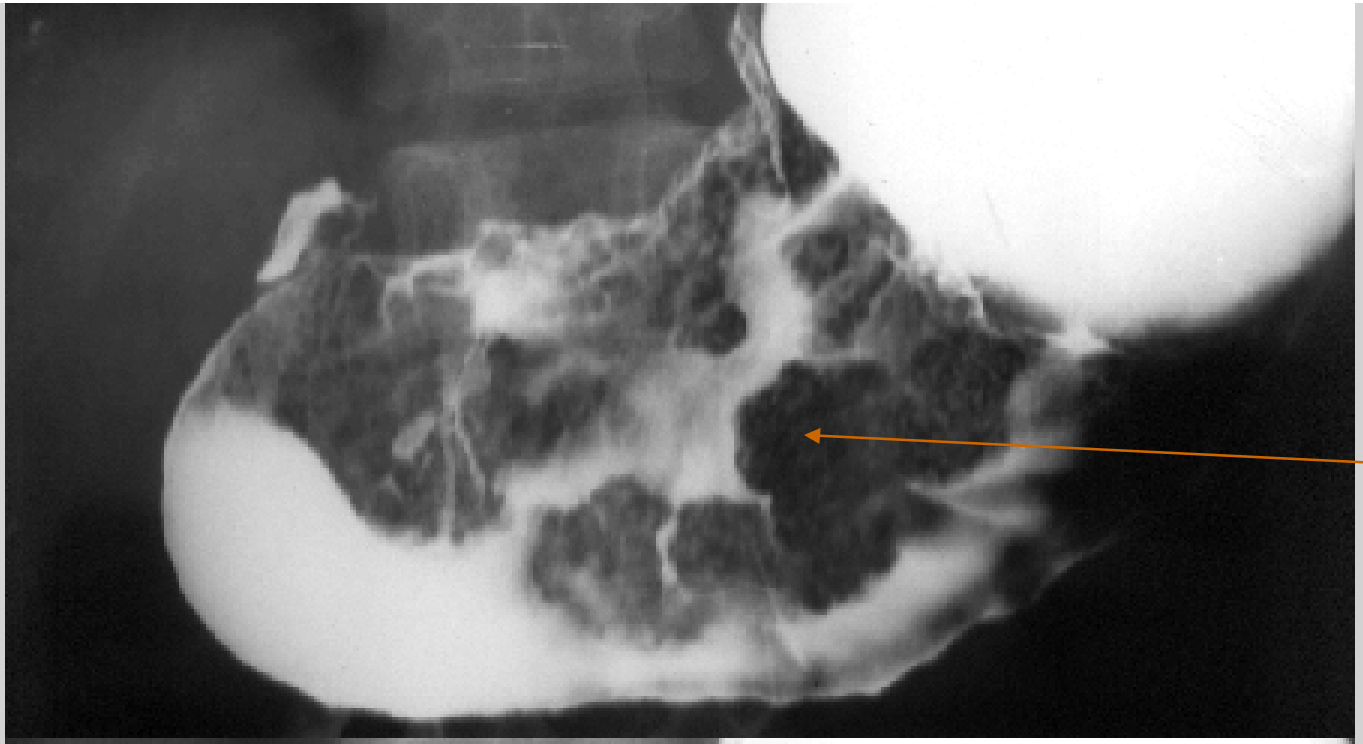
3.粘膜平坦 flattening mucosa

4.粘膜纠集 radial folds



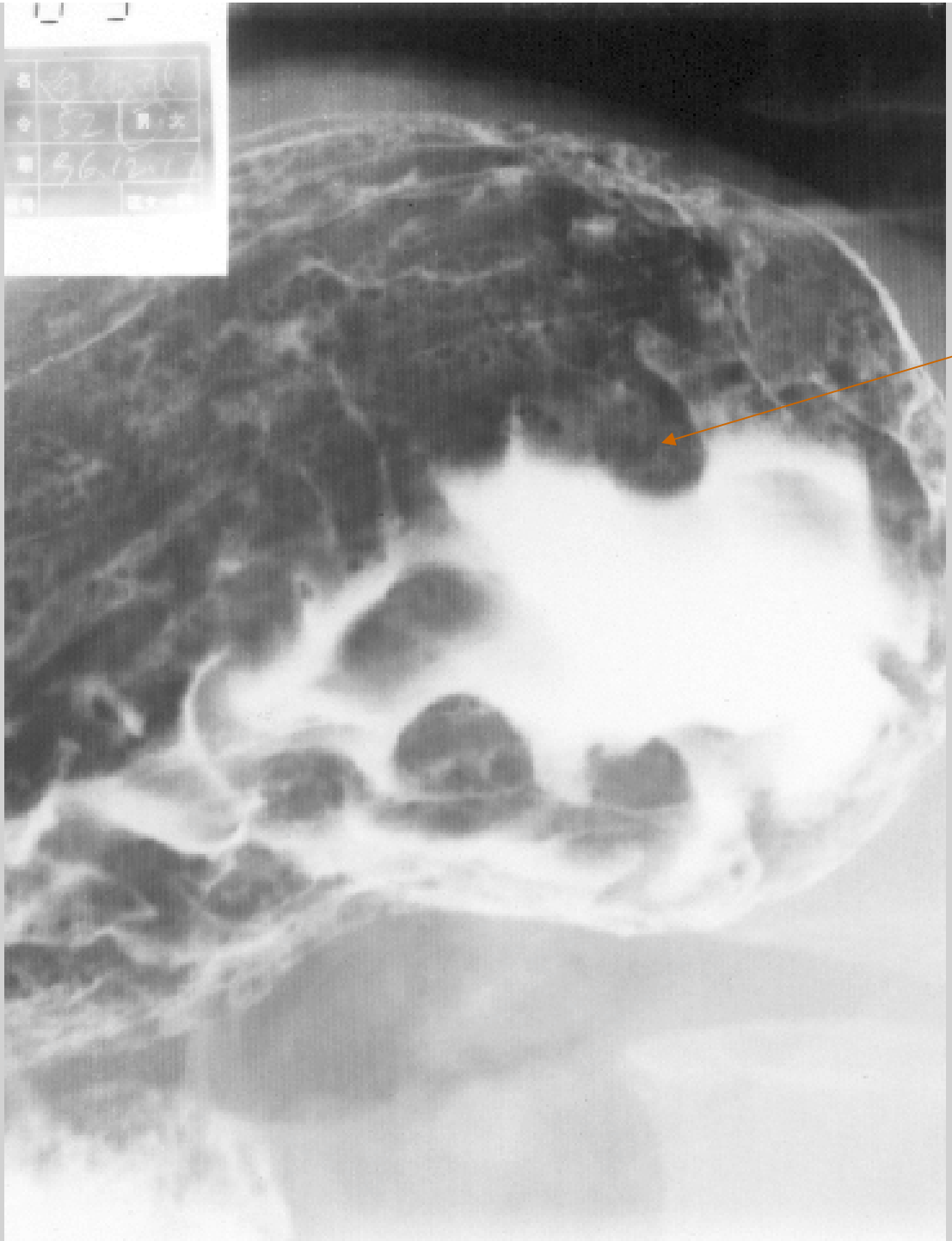
贲门癌食管受累：

食管下段管腔明显缩窄，边缘硬韧不规，粘膜破坏。胃贲门区不规则软组织肿块影。



黏膜破坏

溃疡型胃癌：
以胃角区为中心，示一较大凹陷型病变，中央侧胃壁伸展不良 - Borr 3 型胃癌。



Thickening mucosa

胃底静脉曲张：
胃底粘膜纹增粗、迂曲、形成多数结节样透光影。

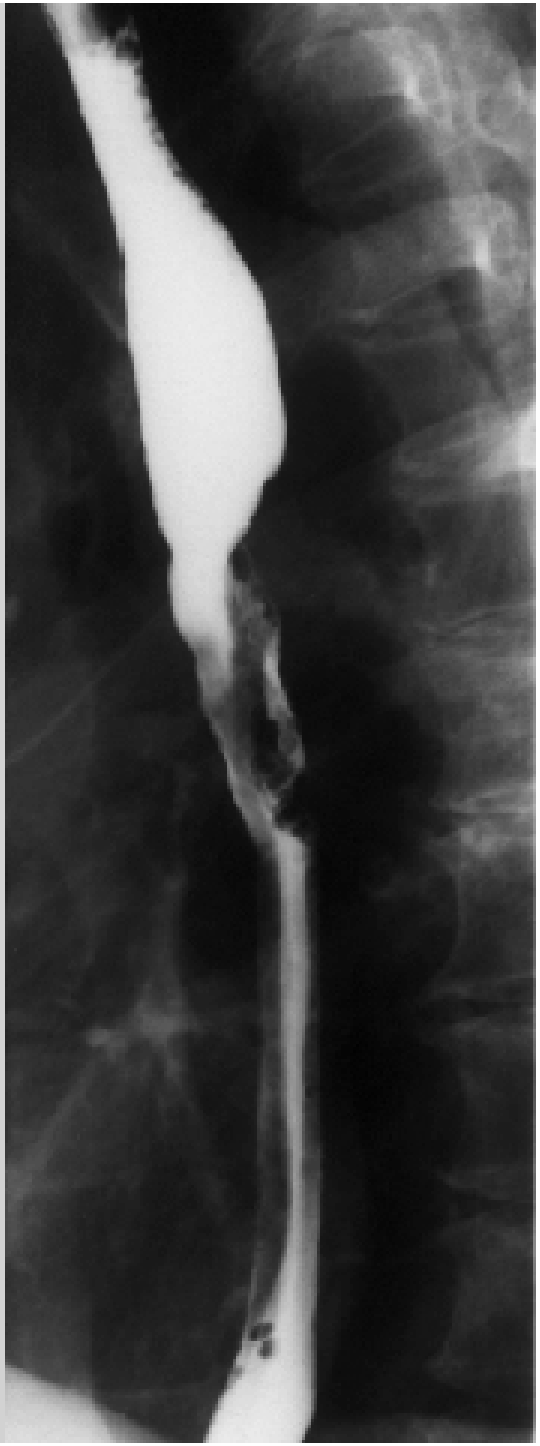
溃疡型胃癌：
胃窦后壁示一较大溃疡，环堤宽厚，小弯侧环堤平坦消失 -Borr 3 型胃癌。

Radial mucosa

粘膜皱襞纠集：
胃体下部后壁示一溃疡钡影，外周粘膜纹向其集中。

# Change of the lumen

- Narrow
- Distension



eccentic narrowing

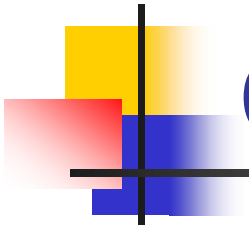
食管癌：

右前斜位示食管中段限局性缩窄，边缘毛糙不规则，左前斜位显示病变区为偏心性缩窄，并可见溃疡及环堤。

# Distension

肠管扩张：

十二指肠降段扩张，其远侧缩窄，造影剂未能通过 --胰腺炎愈后粘连所致。



# Change of the position or mobility

compression

外压性改变：

左上腹巨大占位病变所致食管、胃底受压，内腔变窄。

Compression
from gallbladder

消化管外压性改变：
　　十二指肠降段上部外侧受压变窄。局部轮廓线光整柔软——胆囊压迫。

食管外压性改变：

食管中段管腔受压变窄，呈迂曲状－大血管压迹。

# Functional change

- Change of tension：chalasia or spasm
- Change of peristalsis：strengthen or weaken
- Change of motility： accelerate or weaken
- Change of secrete function: decreased or increased

# Diseases

## Carcinoma of the Esophagus

**Radiologic types :1）Polypoid form; 2）Ulcerating form；3）Infiltrating form; 4) Narrowing form**

**Radiology findings：**

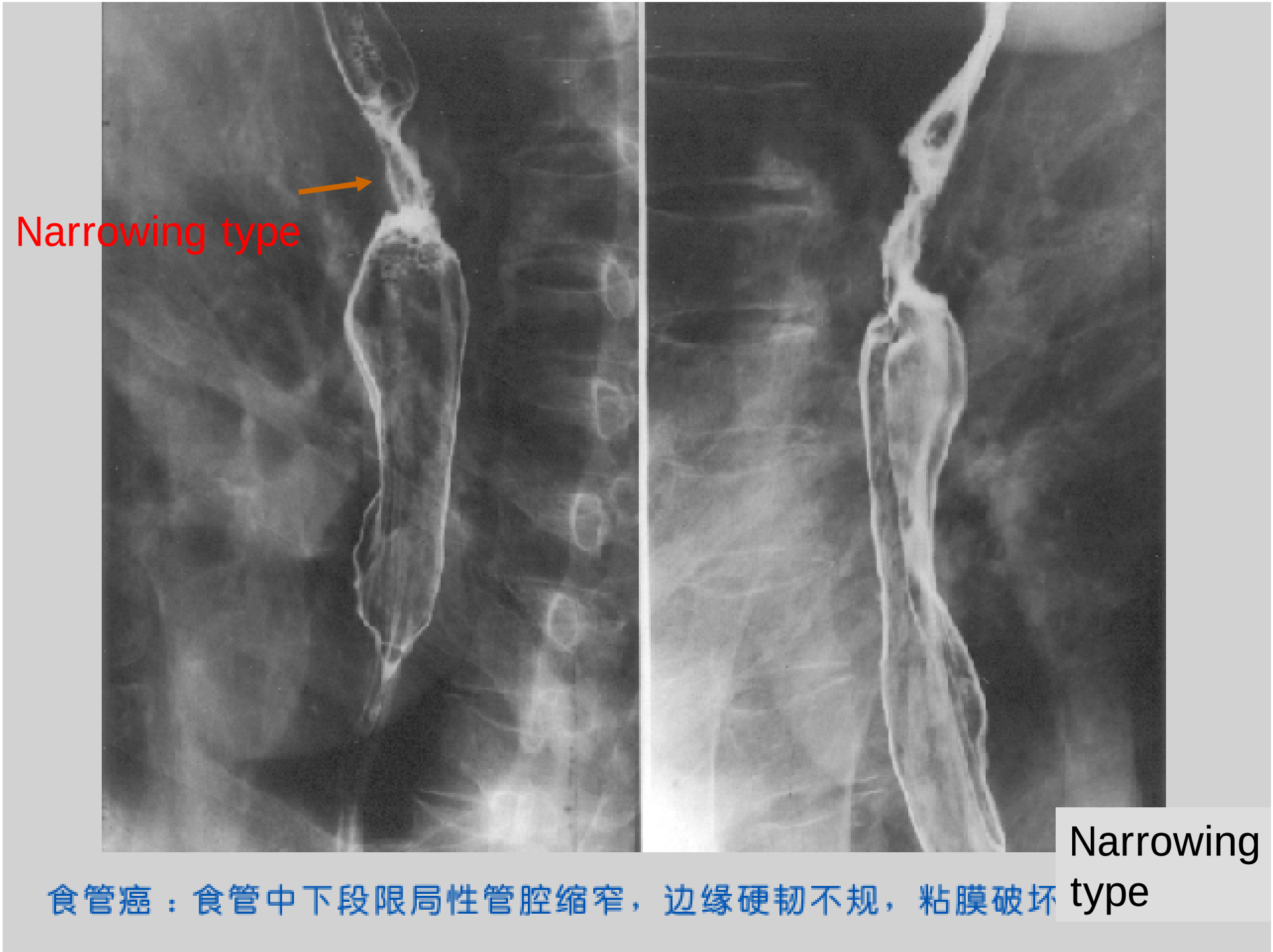
**1）Destruction or disappear of mucosa**

**2）Narrow of the lumen，rigidity of the wall**

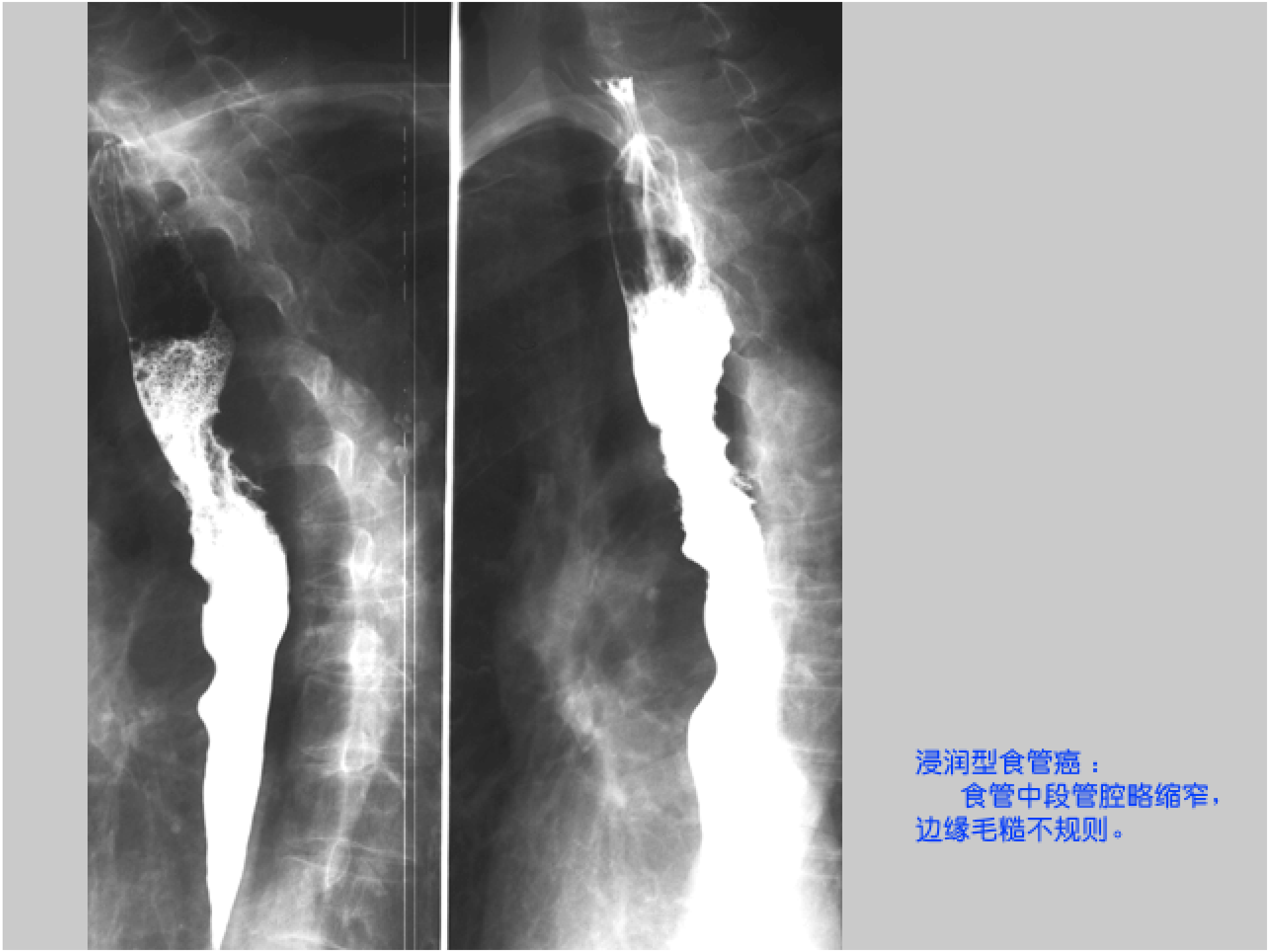
**3）Filling defect in the lumen**

**4）irregular crater**

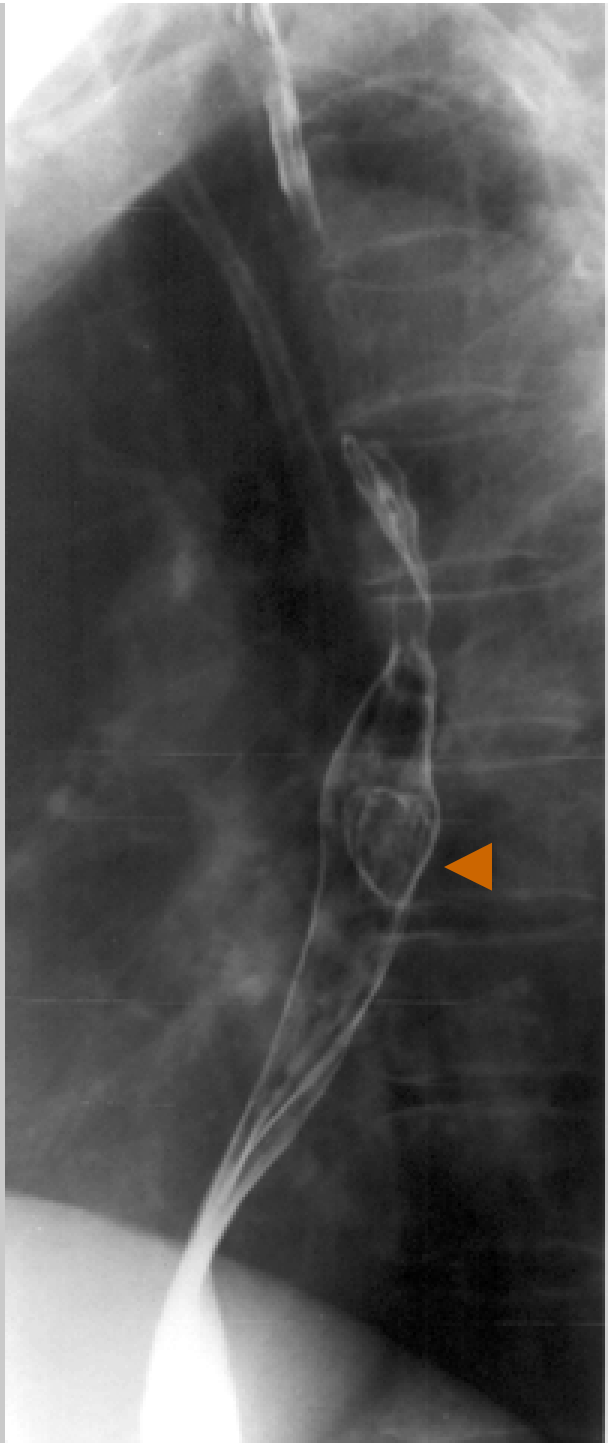
**5) Weakened or disppear of peristalsis**

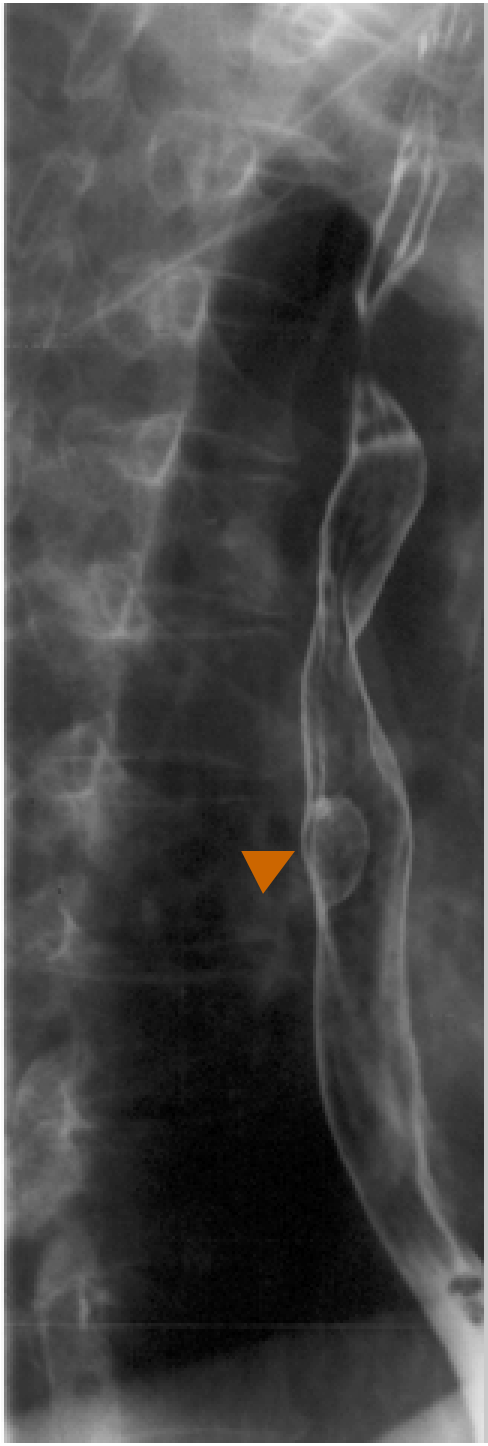



食管癌：食管中下段限局性管腔缩窄，边缘硬韧不规，粘膜破坏



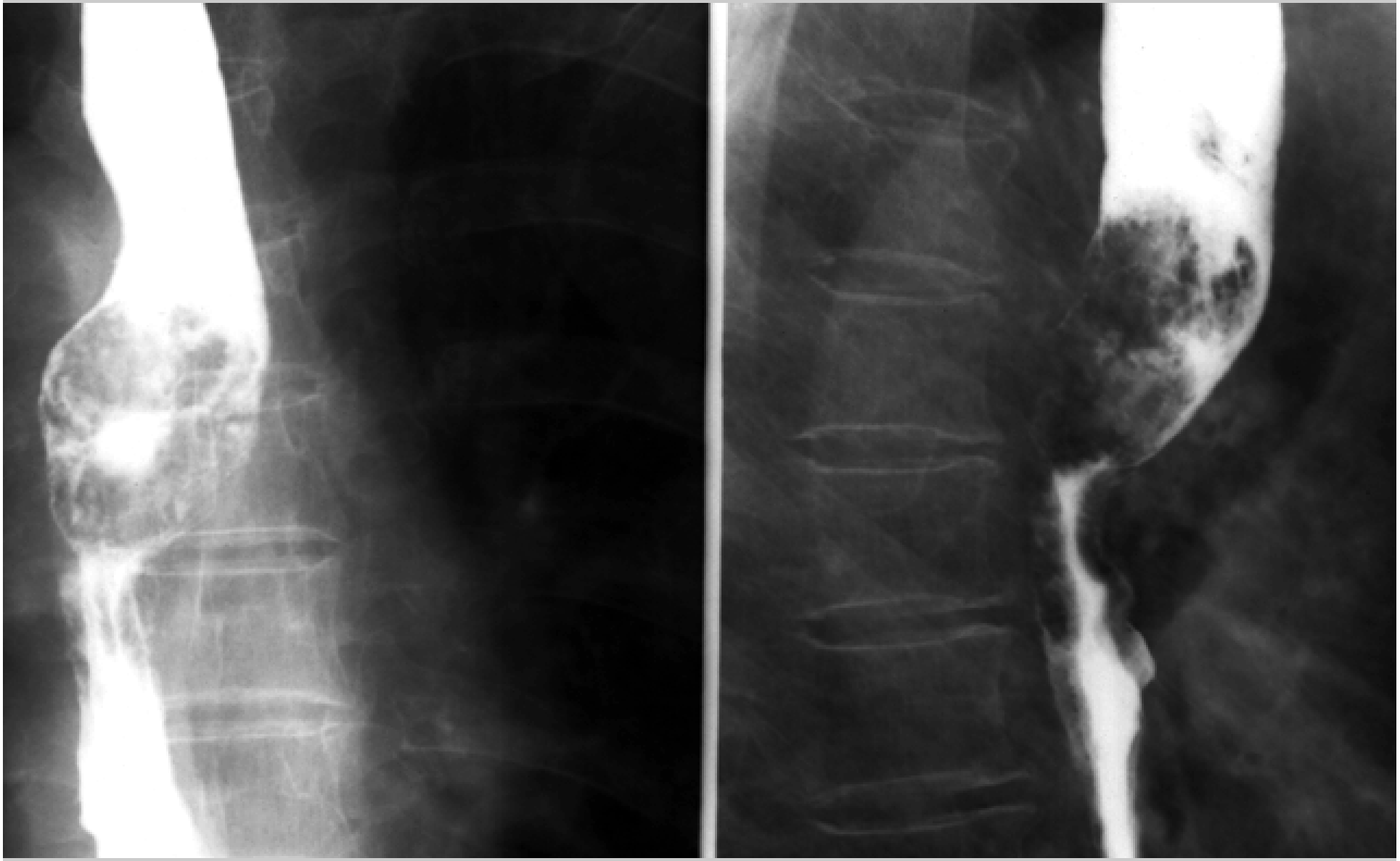
浸润型食管癌：
　　食管中段管腔略缩窄，边缘毛糙不规则。



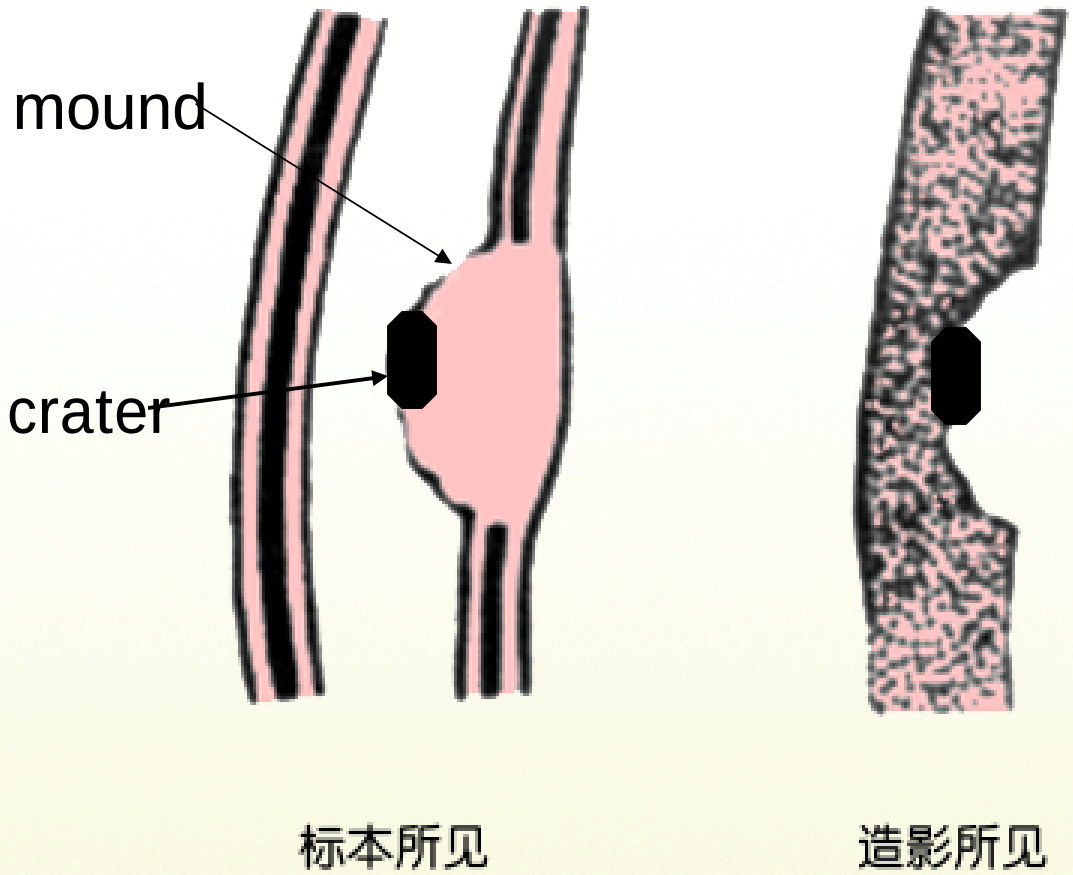


食管癌：

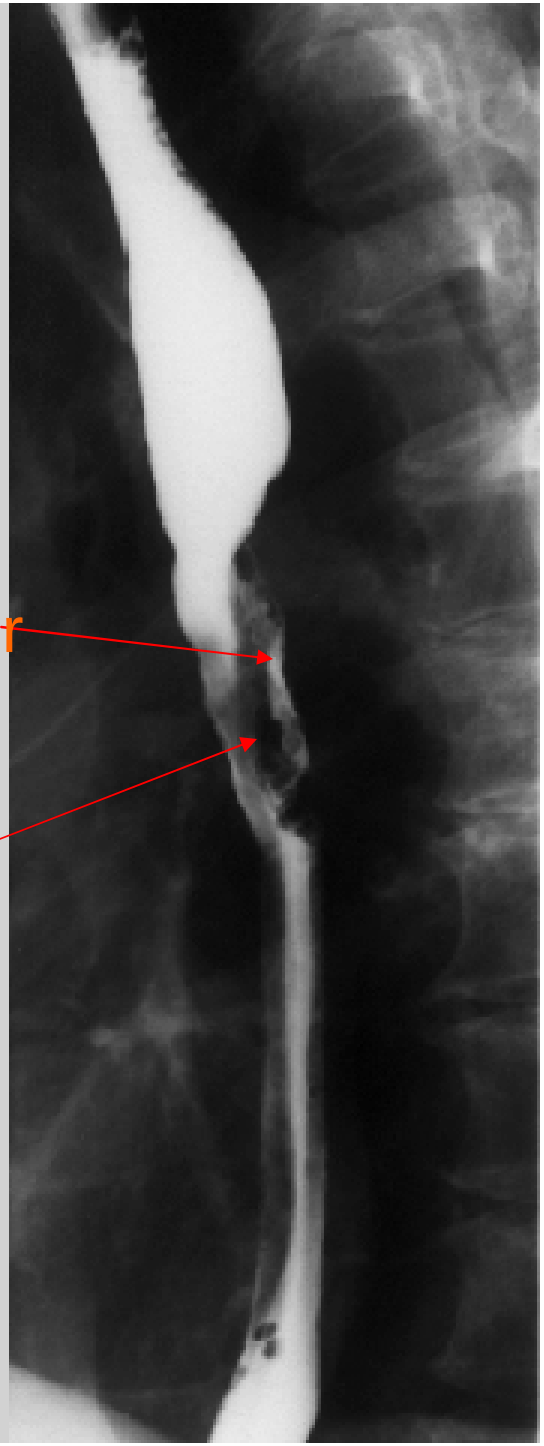
食管中段示一较小隆起样肿物，形态欠规则，略有分叶 -- **Polypoid form**



增生型食管癌：食管中所示一隆起型病变，形态不规则，呈分叶状。




Filling defect



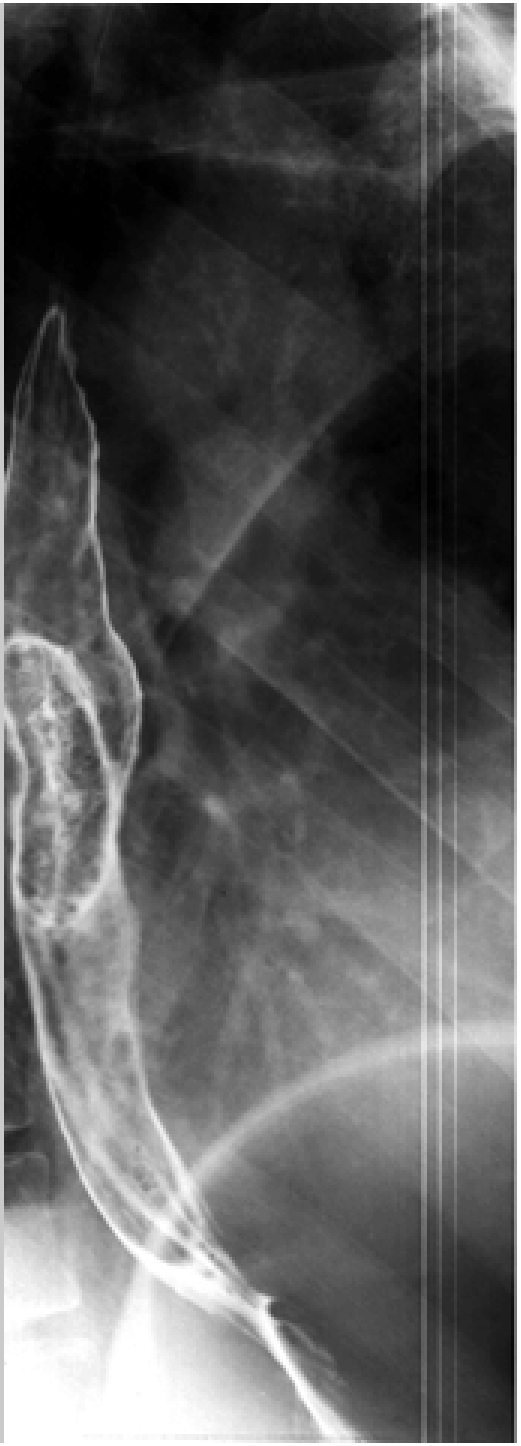
## Ulcerating form

食管癌：

右前斜位示食管中段限局性缩窄，边缘毛糙不规则，左前斜位显示病变区为偏心性缩窄，并可见溃疡及环堤。

溃疡型食管癌：

食管中下段偏心性管腔缩窄，龛影位于腔内，其周围以半环状癌堤。



溃疡型食管癌：

充盈相食管中所示一凹陷型病变，中心为长条不规则形龛影，周围环状隆起，双对比相示病变区与正常区分界清楚。

Earlier period esophygeal carcinoma: destruction of mucosa, small barium collection, rigidity and irreguler of the wall

早期食管癌：食管中段示一较小浅糜烂病灶，
局部粘膜结构破坏，代之以浅淡积钡影，邻近管壁欠光整。

#0001/S

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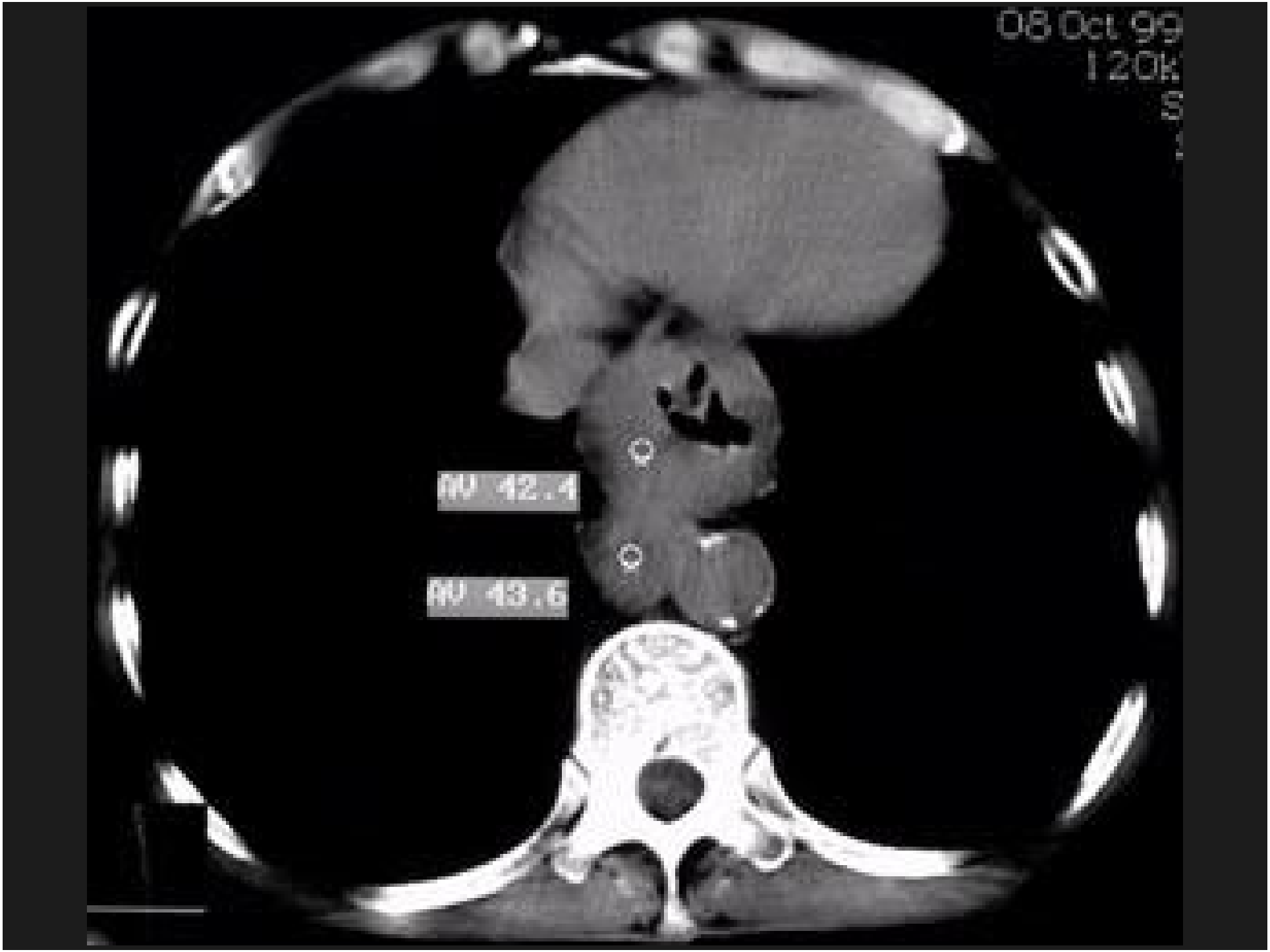
08 Oct 99
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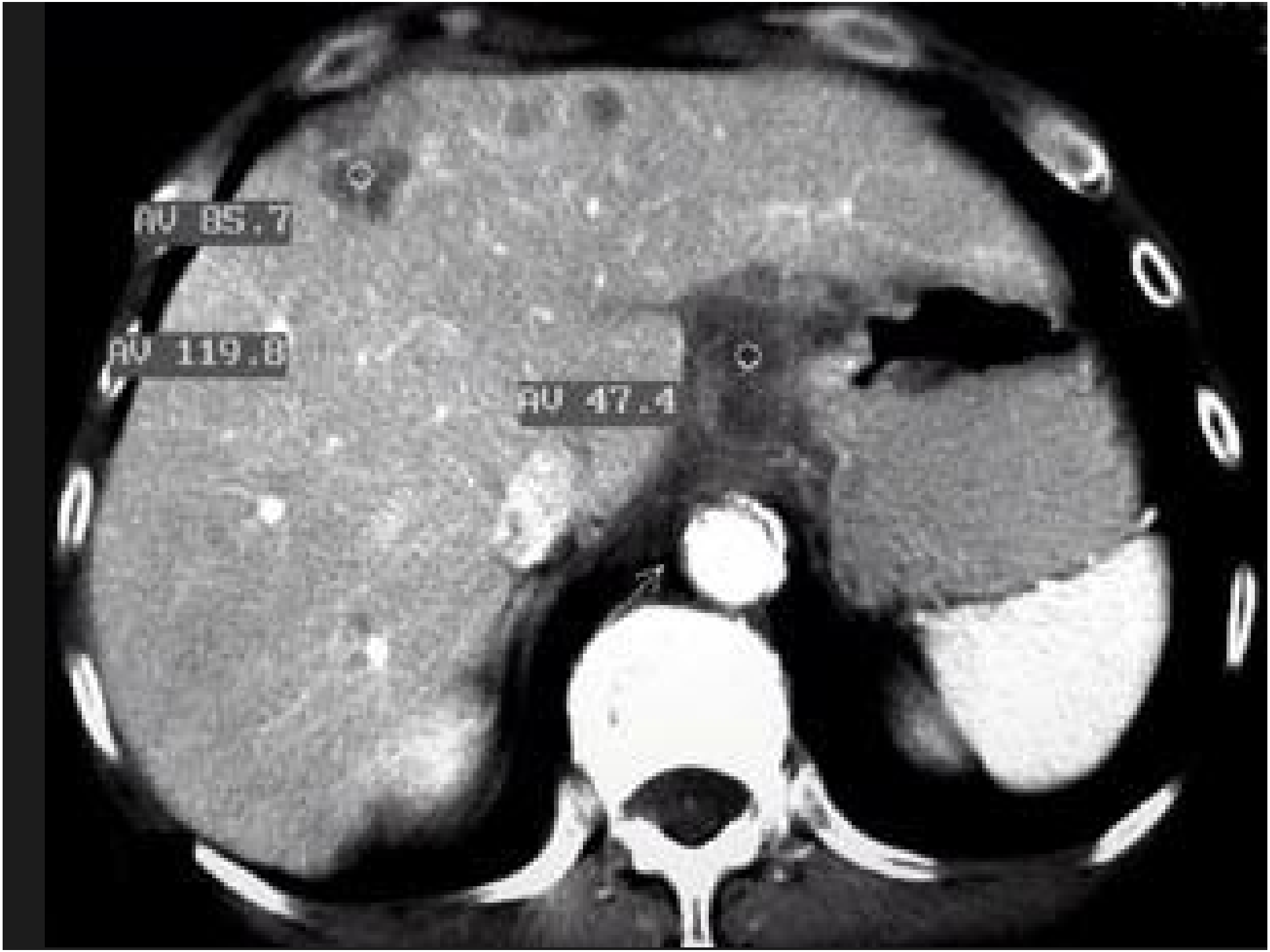
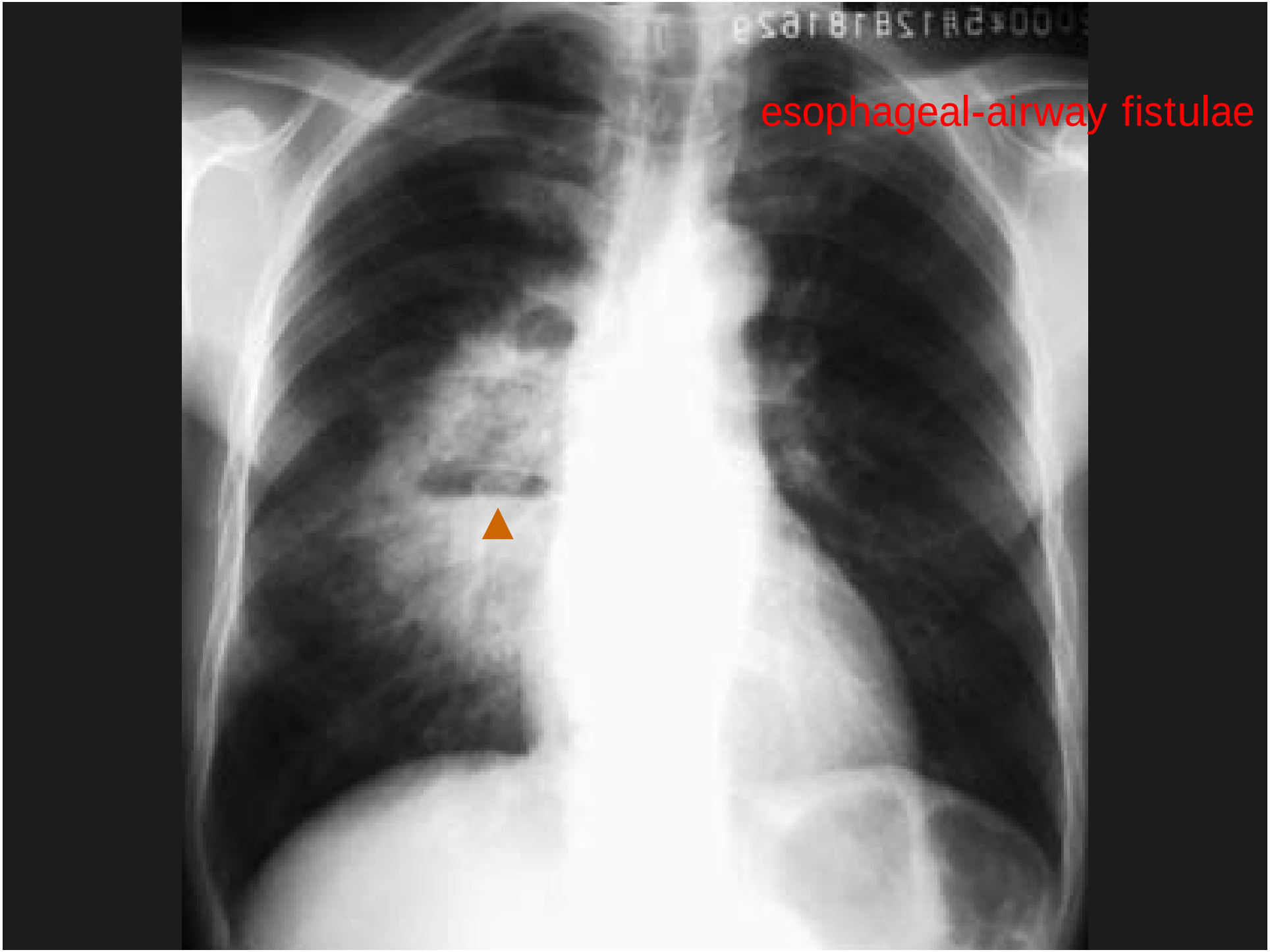
NV 42.4
NV 43.6


AV 85.7
AV 119.8
AV 47.4

esophageal-airway fistulae

Tracheoesophageal fistula


esophageal-airway fistulae

# Disease's diagnosis

**Esophageal varices**:

- Complication of portal hypertension:

Dilated submucosal veins due to increased collateral blood flow from portal venous system to azygos system

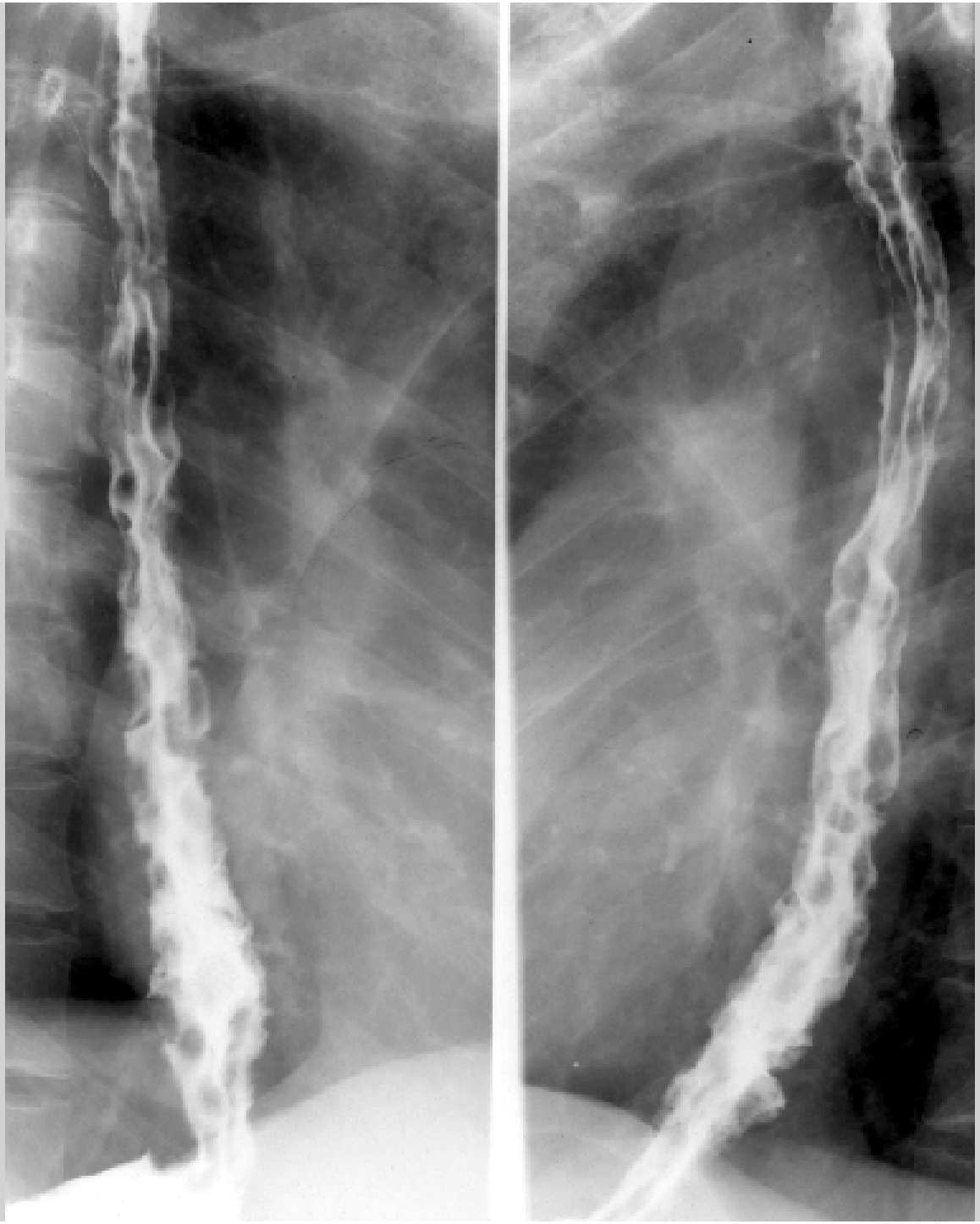
- Radiology finding:

Thikening tortuous folds look like worm or bead-like filling defect

The wall is still flexible and can distend and contract easily

# Endoscopy

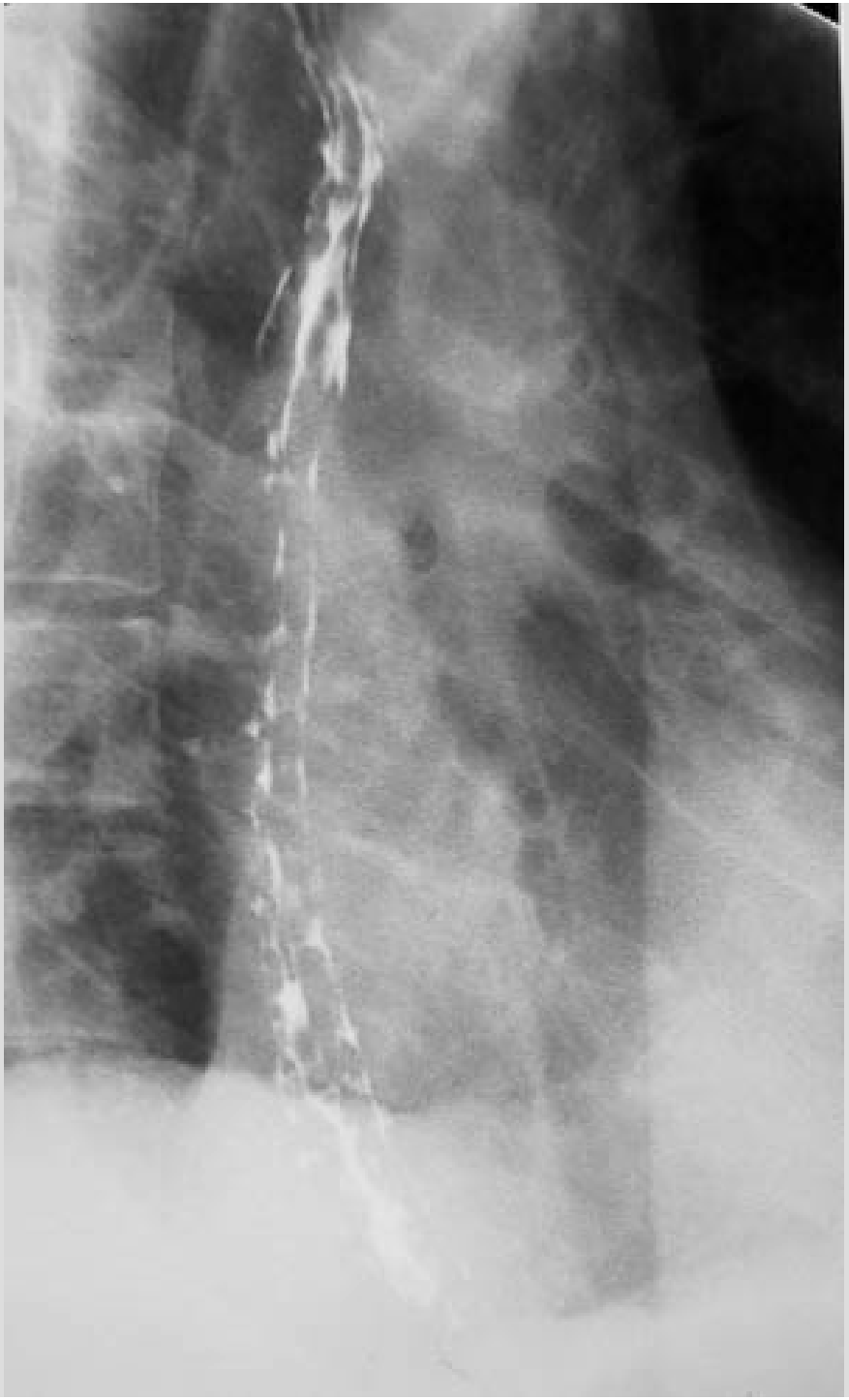
# Esophageal varices (CT)



Advance stage:

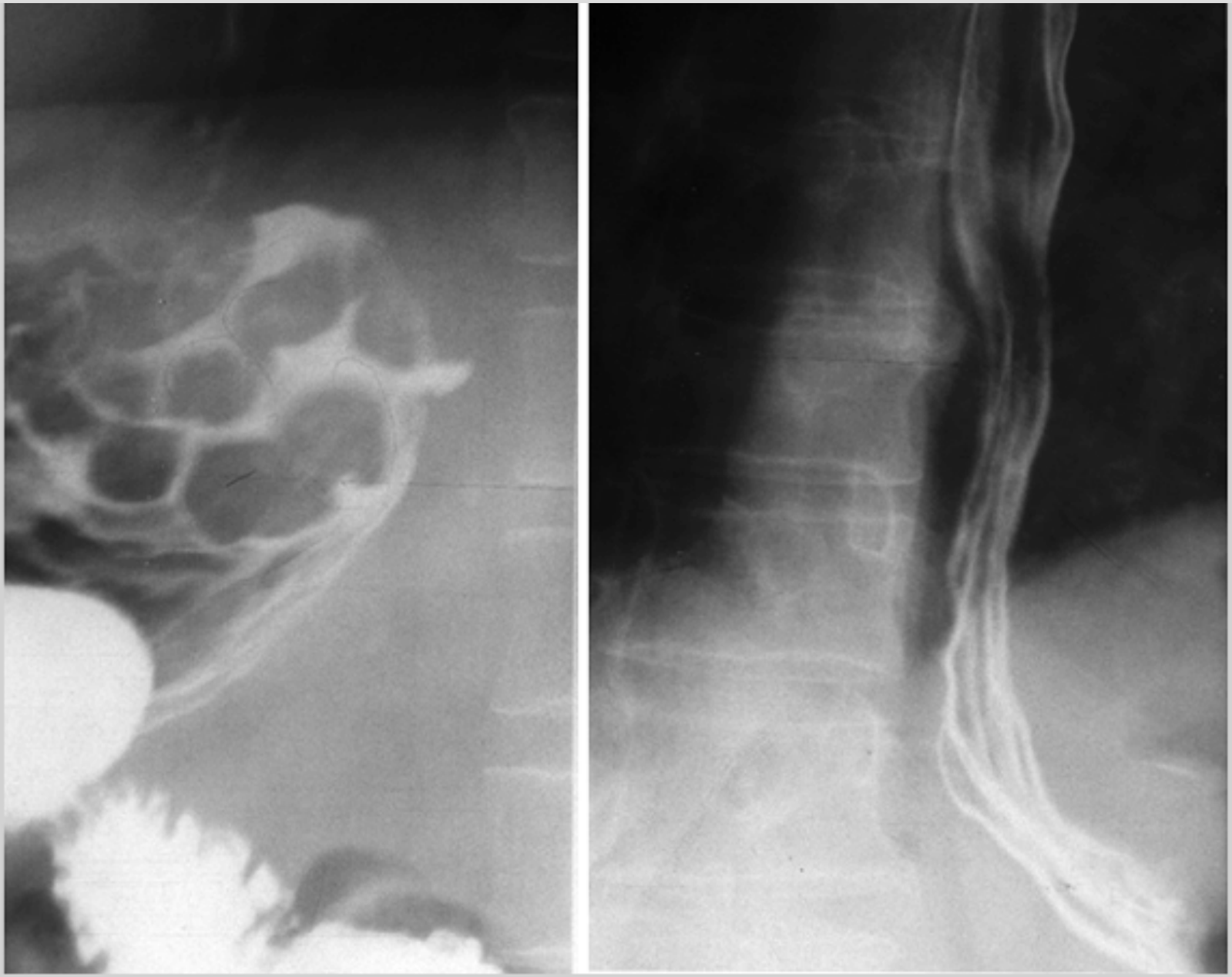
Thickening and tortuous folds like Worm

食管静脉曲张：
食管全程管壁不规，粘膜纹增粗，迂曲。

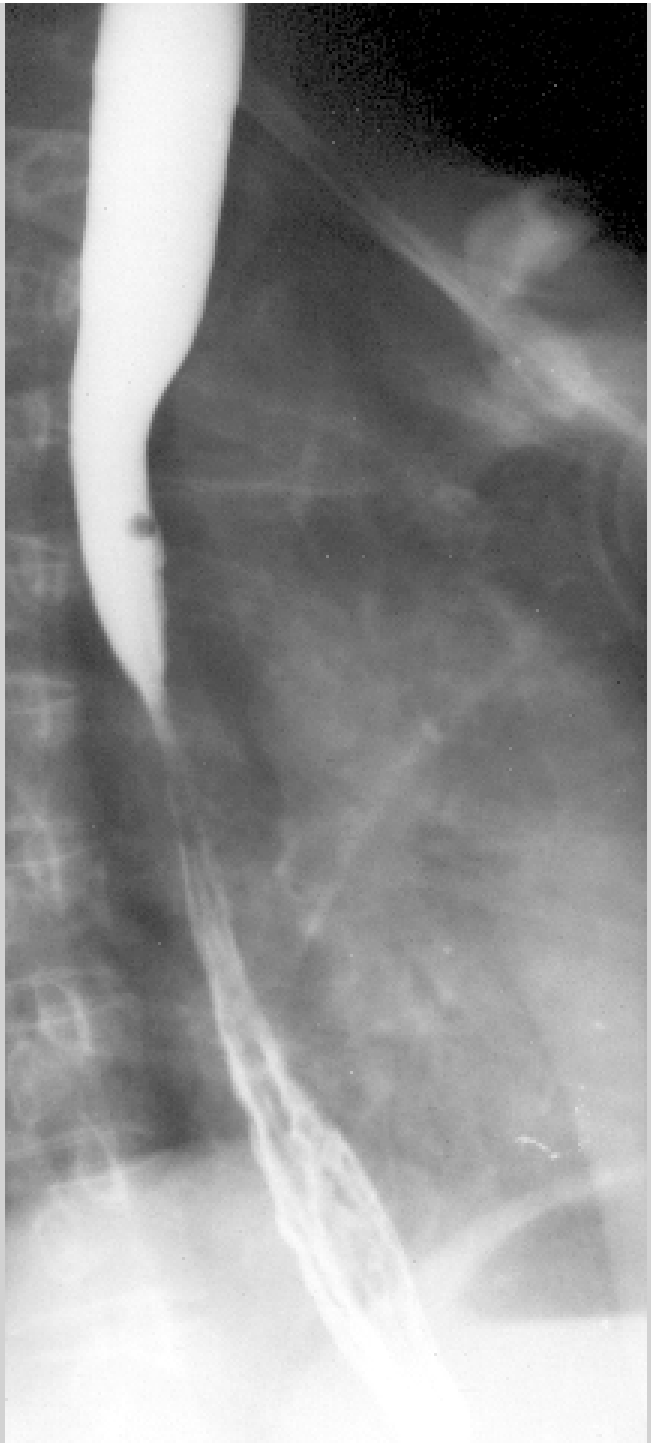


Thickened and interrupted mucosal folds

dash line



食管下段、胃底静脉曲张：食管下段粘膜纹增粗稍迂曲。胃底粘膜纹明显增粗呈多数类圆形充盈缺损。



(earliest sign)

# Peptic ulcer

# Gastric Ulcers(胃溃疡)

- 1） **Ulcer crater**： Lesser curvature, round, linear
  neck of ulcer： **Hampton's line**； **Ulcer collar**；
  **narrow neck sign**

- 2）radial folds
- 3）**Function change**：

  spastic incisura；increased secretion

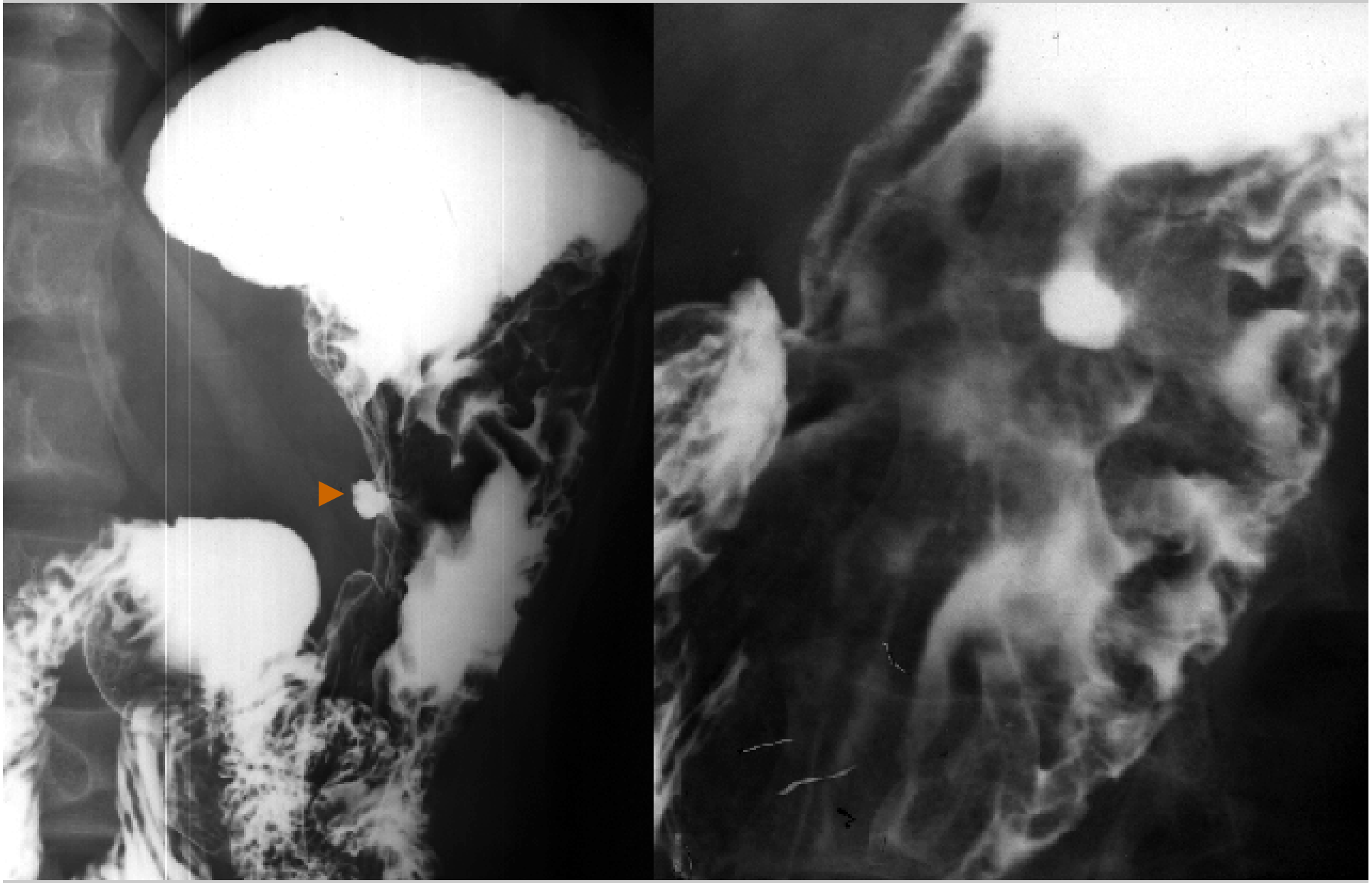
  Increased or decreased peristalsis

- 4）Cicatricle change，gastric deformation and narrow

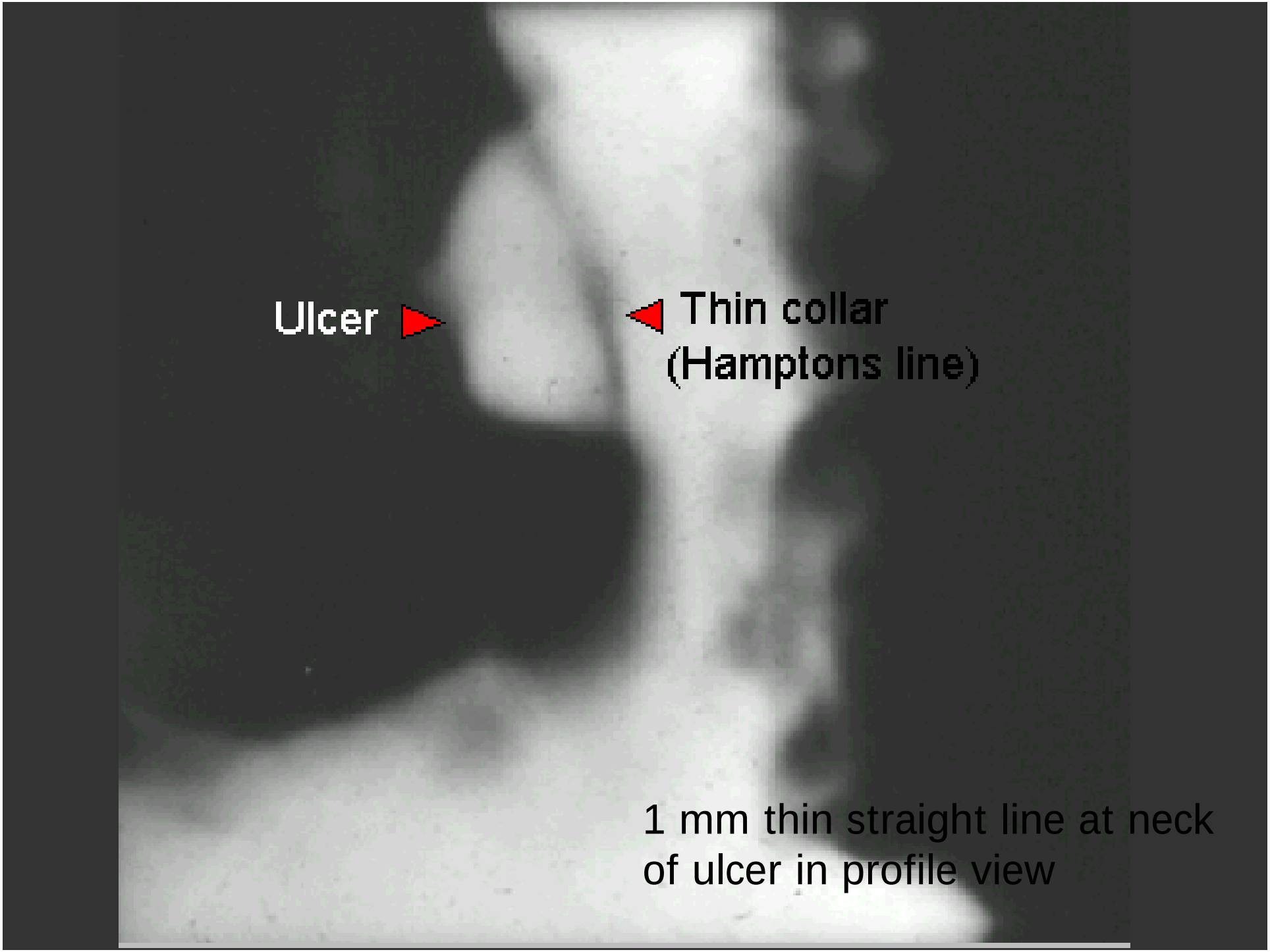
# Gastric Ulcers(胃溃疡)

- **Ulcer crater-**collection of barium on dependent surface which usually projects beyond anticipated wall of stomach in profile
- • **Hampton's line**-1~2 mm thin straight line at neck of ulcer in profile view which represents the thin rim of undermined gastric mucosa
- • **Ulcer collar**-0.5~1cm,smooth, thick, lucent band at neck of ulcer in profile view representing thicker rim of edematous gastric wall

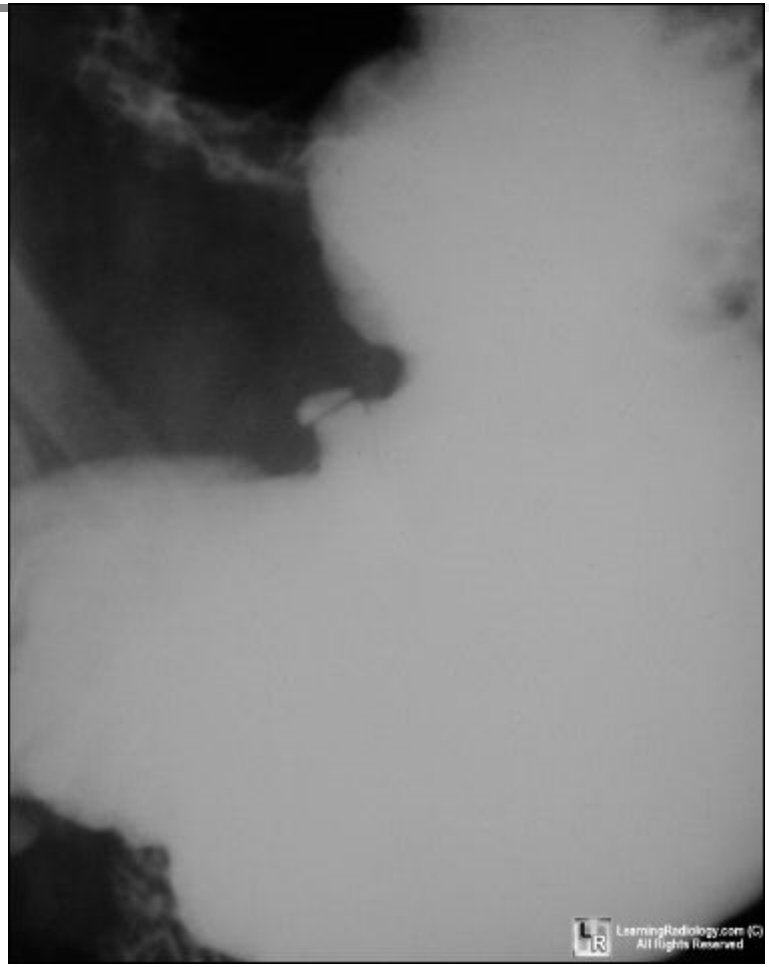
粘膜皱襞纠集：
　胃体下部后壁示一溃疡钡影，外周粘膜纹向其集中。

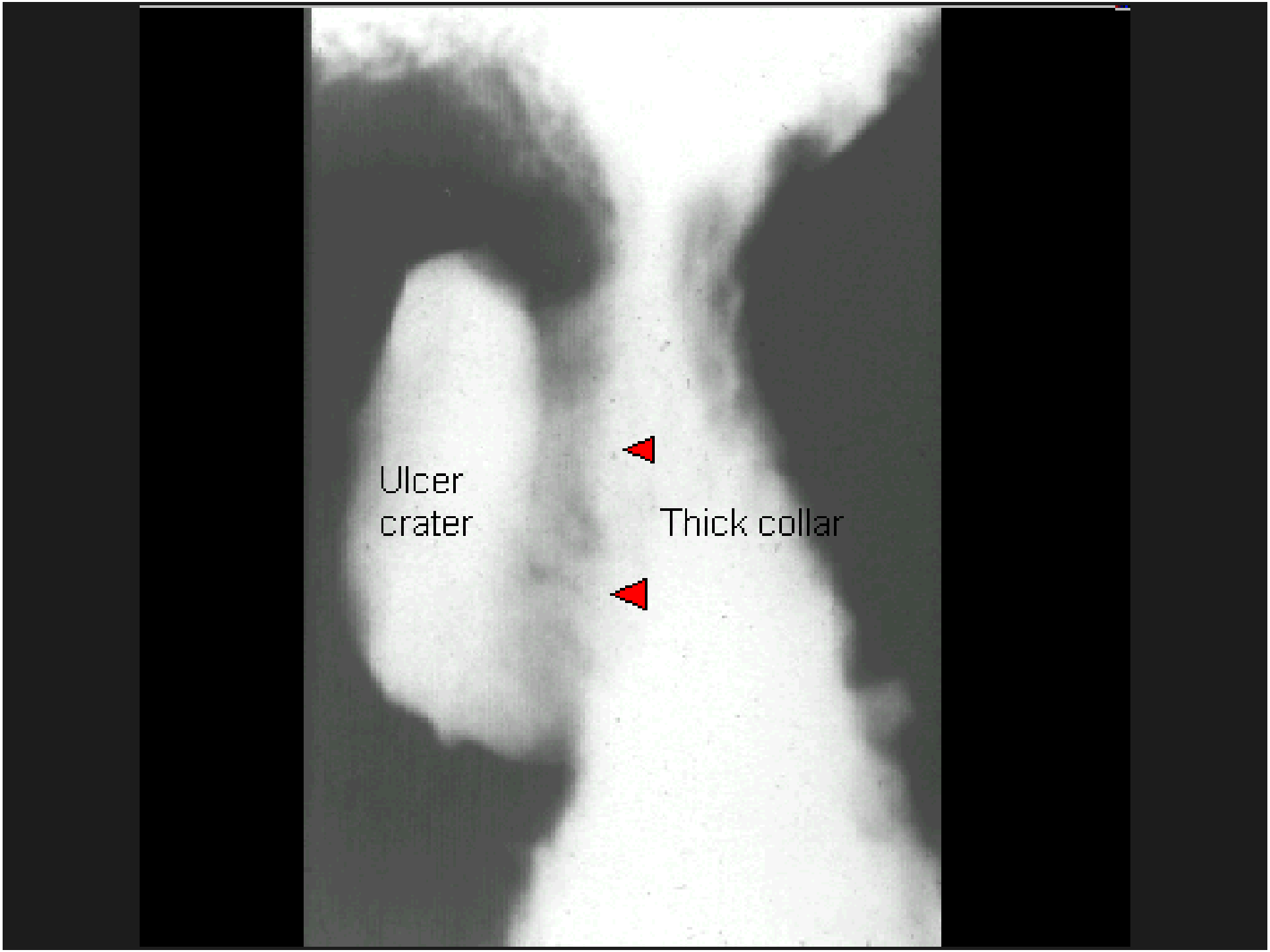


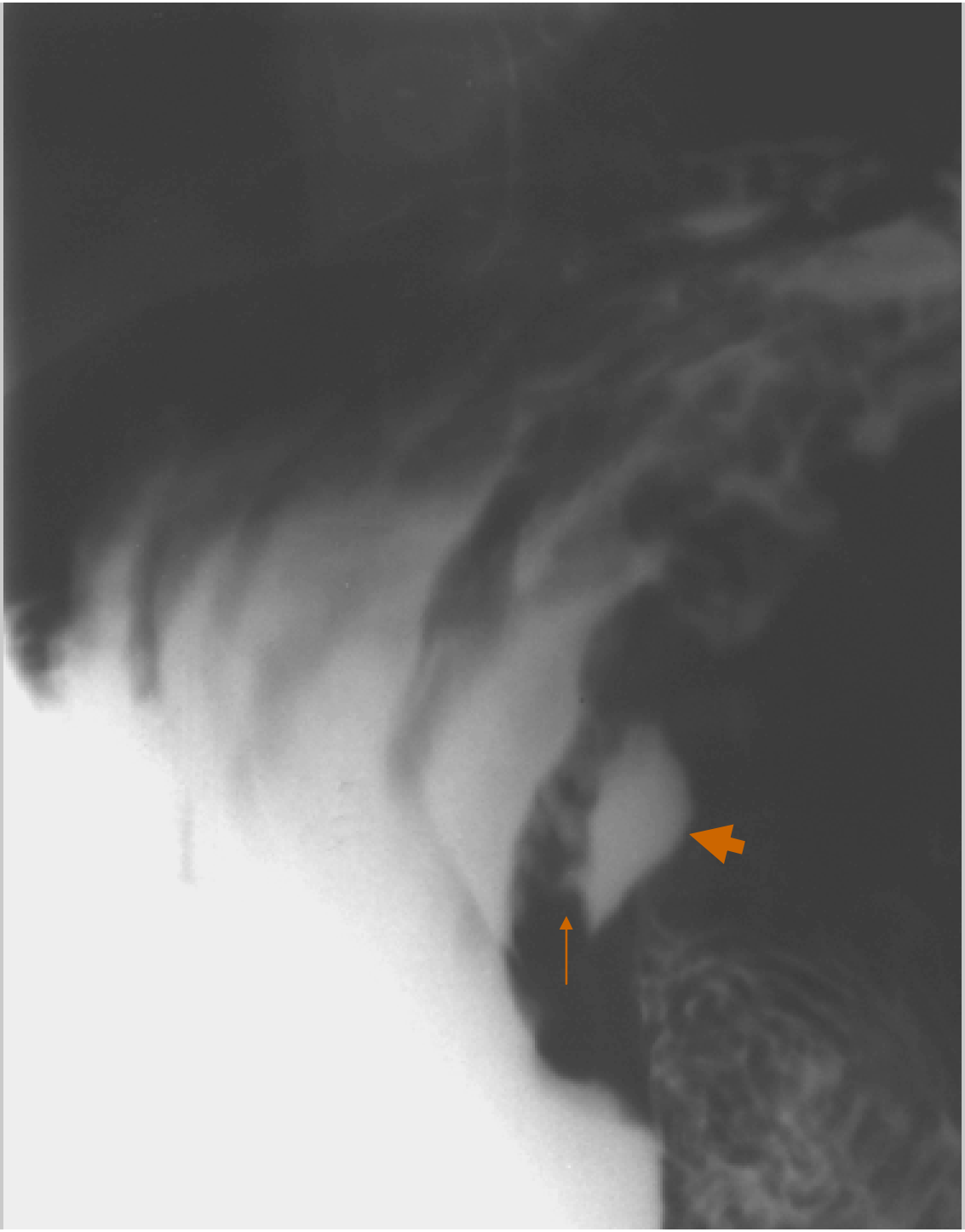
胃溃疡：切线位相胃体部示一突出于胃腔外的龛影，正面相胃体后壁示一类圆形钡斑。


Ulcer
Thin collar
(Hamptons line)
1 mm thin straight line at neck
of ulcer in profile view

# Hamptons line-ulcer

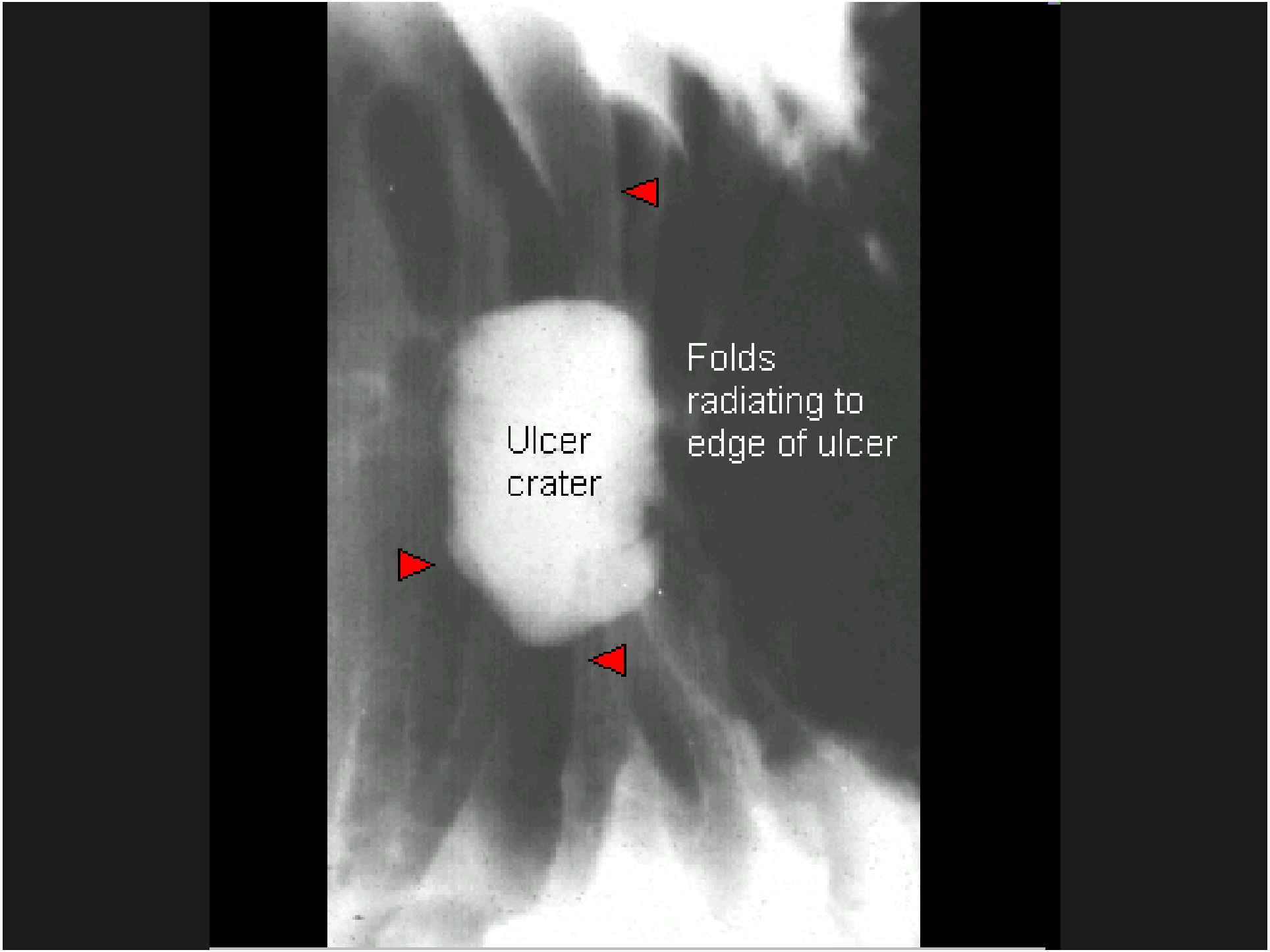


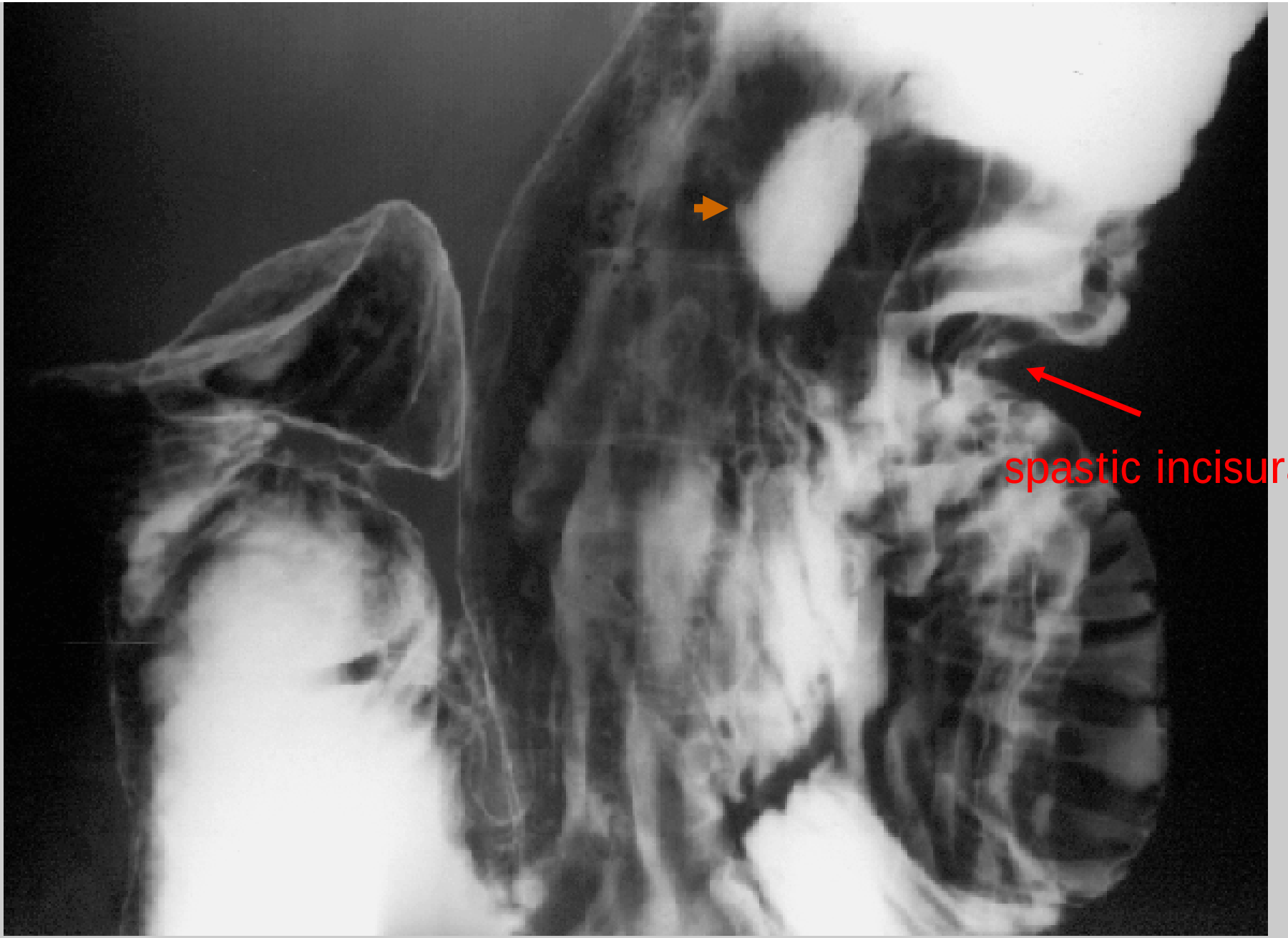

Ulcer
crater
Thick collar



胃溃疡：

胃体大弯侧示一突出于胃腔外龛影，其口部有宽厚的透明带（项圈征）。


Folds
radiating to
edge of ulcer
Ulcer
crater




胃溃疡：双对比相胃体后壁示一长圆形较大钡斑，对应大弯侧胃壁略内凹（痉挛切迹）。

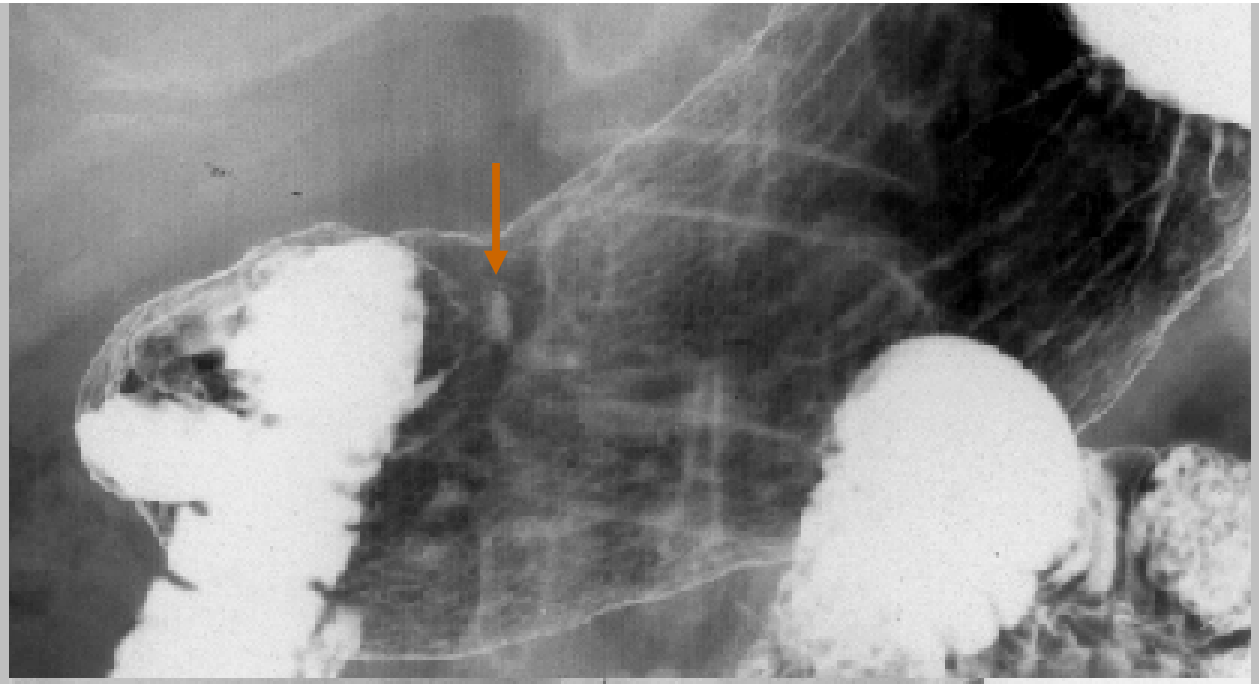
胃溃疡：

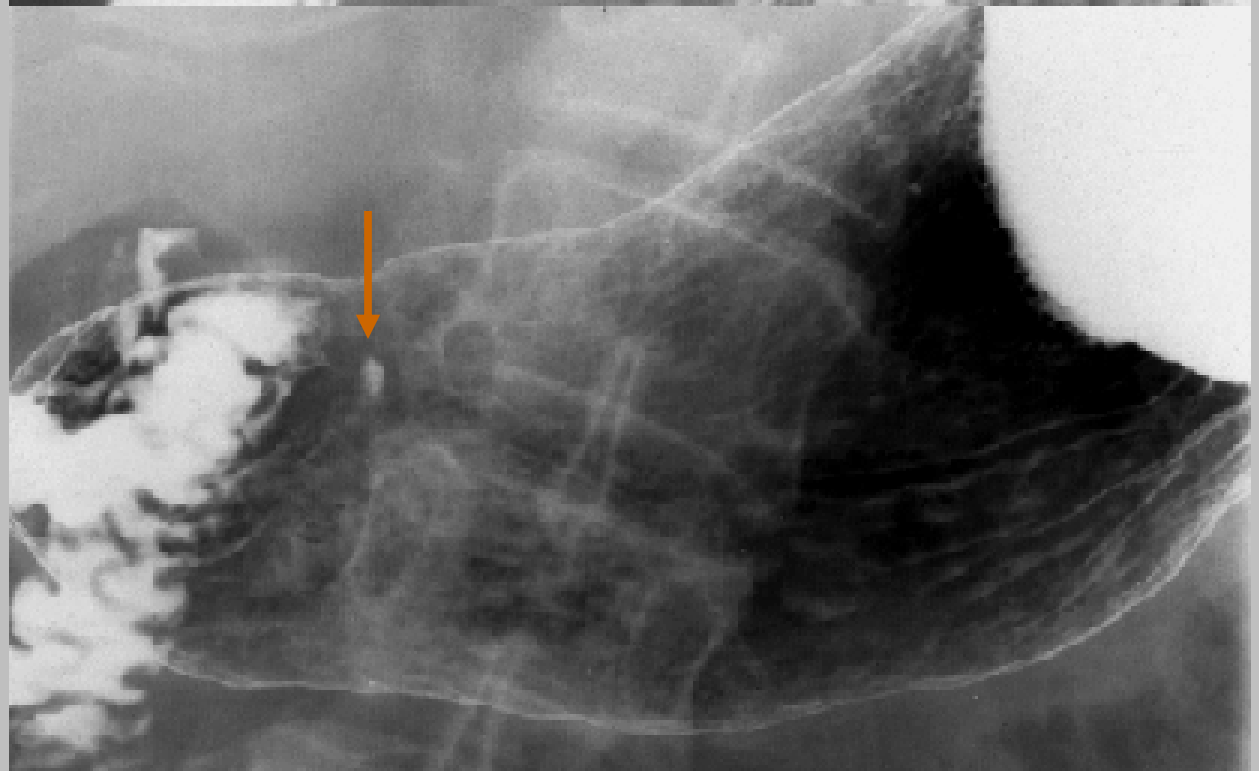
胃体下部小弯侧示一突出于胃腔外龛影，龛影大而浅，充盈相龛影口部，隐约具有较宽厚的透明带－胼胝性溃疡。

Perforating
Ulcer

narrow
neck
sign

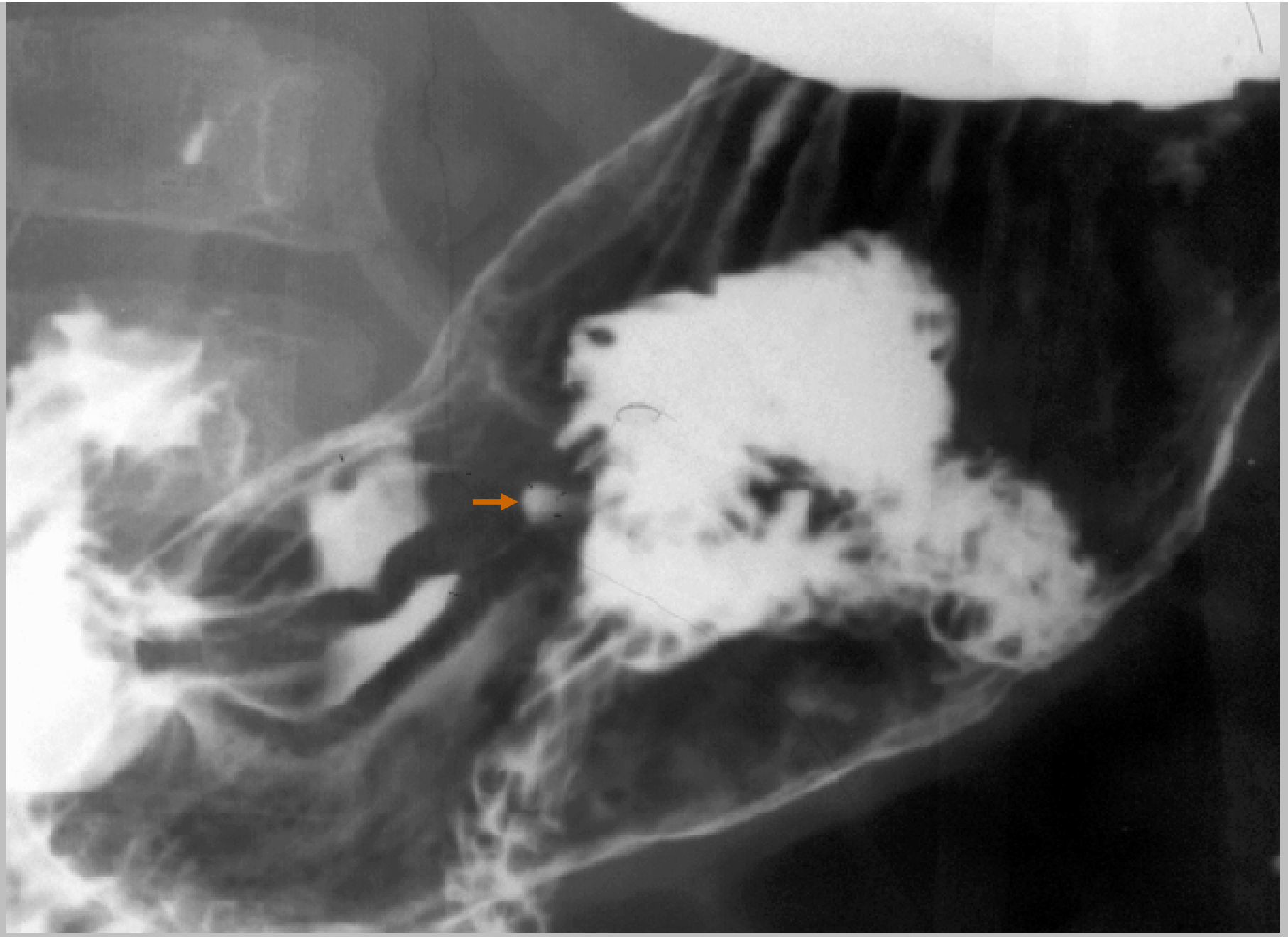
胃溃疡：
　胃角小弯示一外突囊袋样龛影，其内见气钡两层现象，口部隐约显示较宽的水肿带。



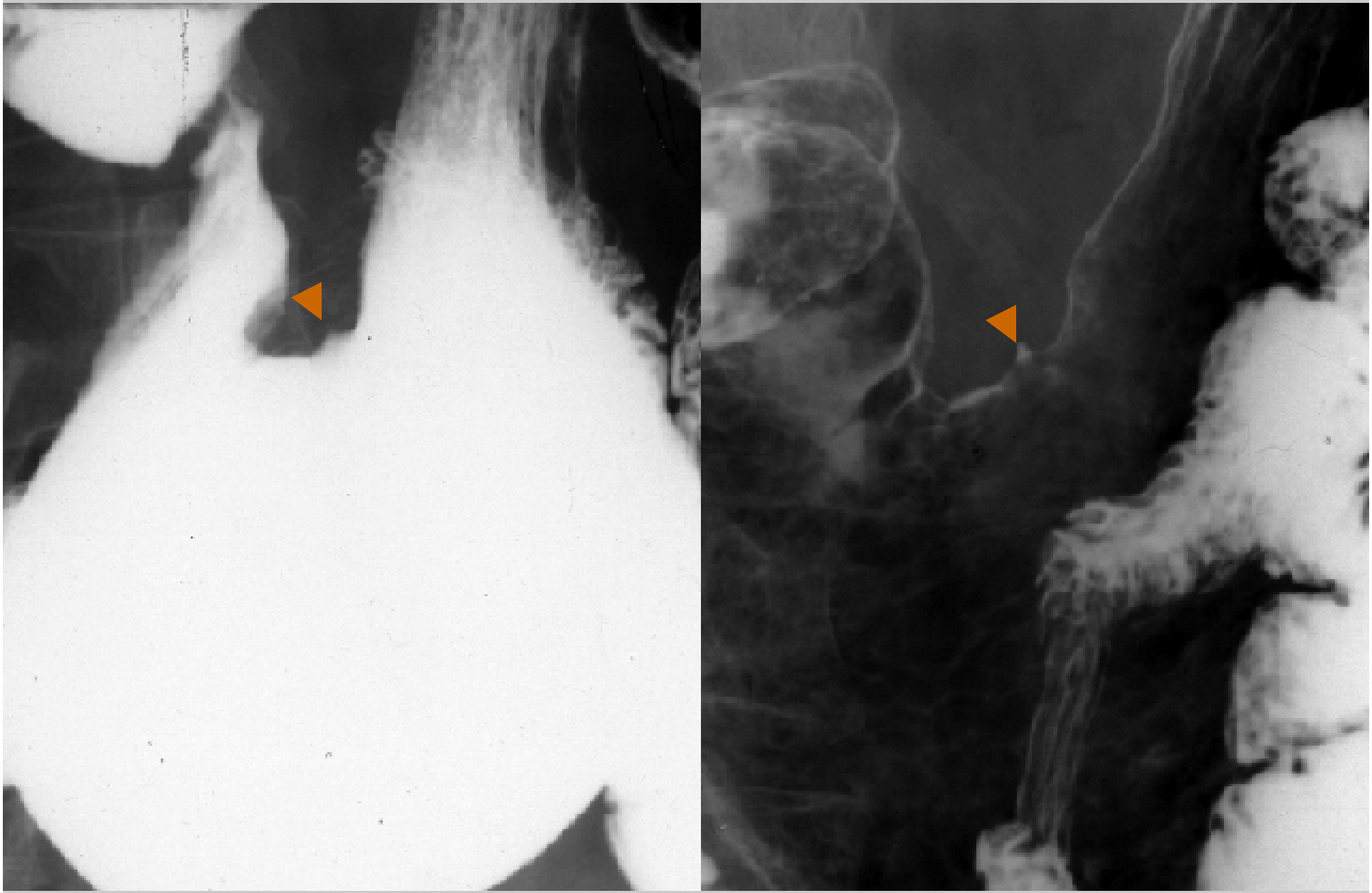


Linear ulcer

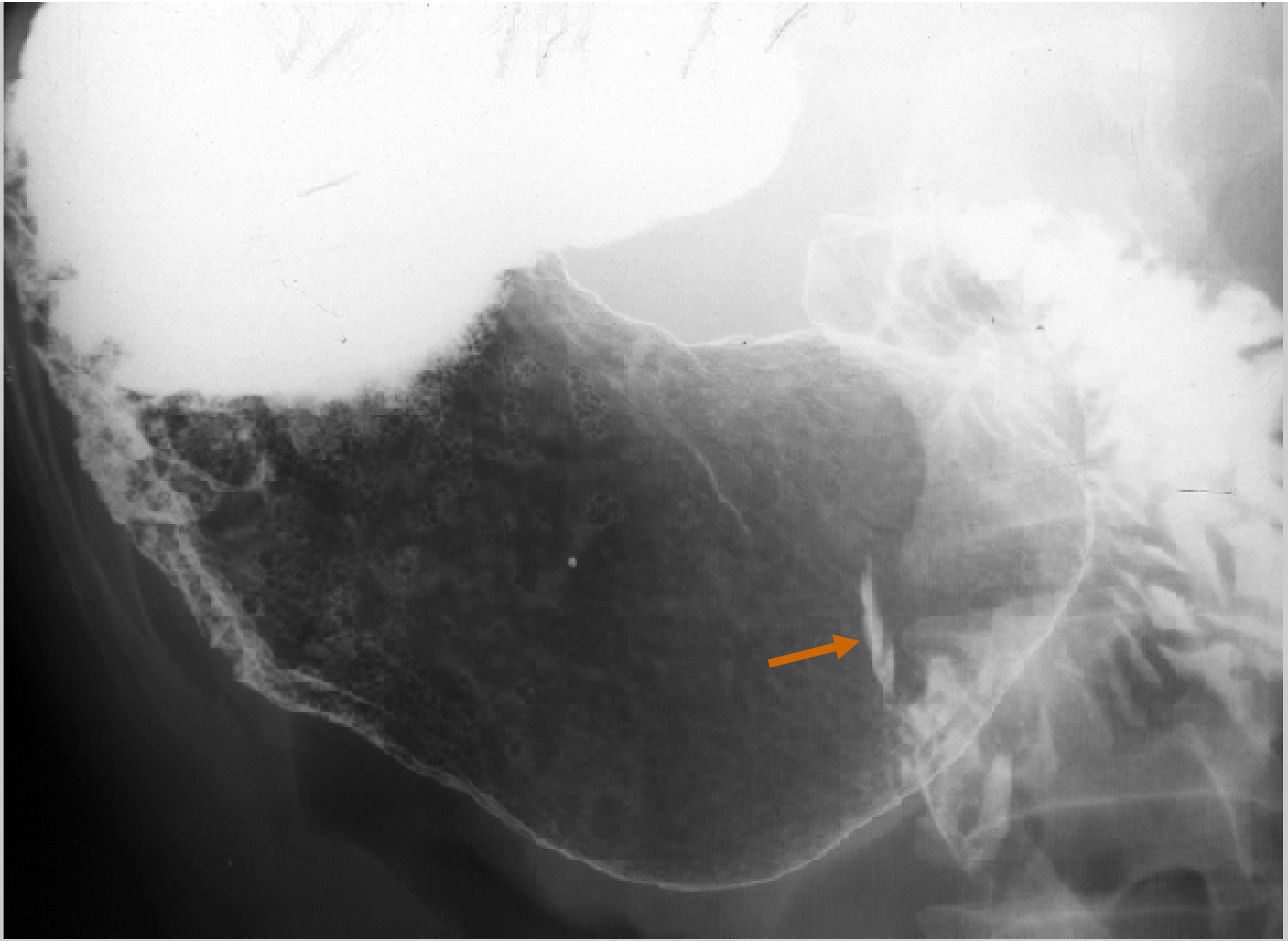
胃溃疡治疗前后对比：
胃窦后壁示一长圆形钡斑，服药治疗三日后钡斑体积缩小，境界更清晰。



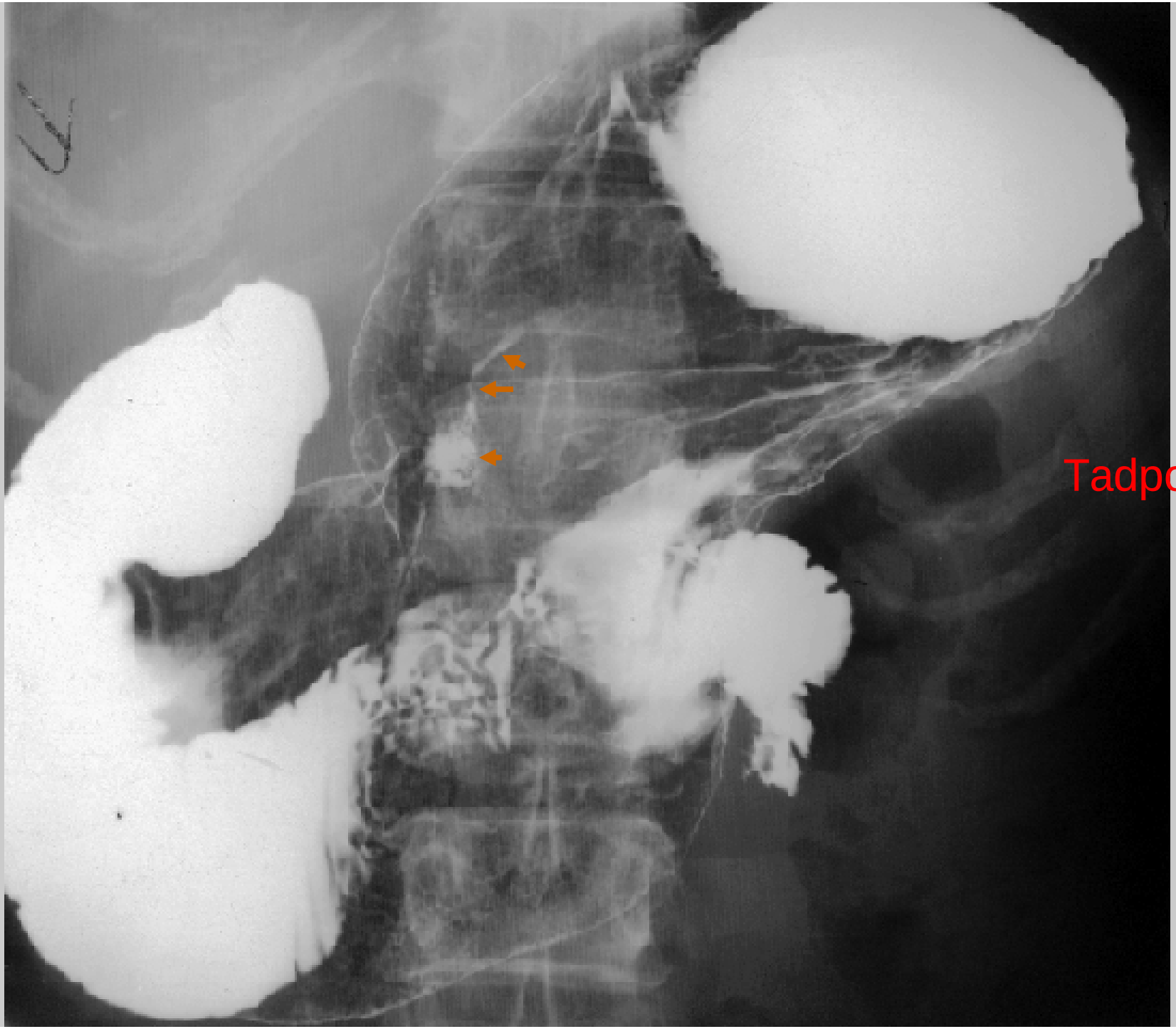
小儿溃疡：胃体后壁示一小圆形钡斑，周围粘膜纹纠集（患者为5岁幼儿）。



愈合过程中的溃疡：胃角小弯侧示一小尖角状龛影。



线形溃疡：胃角区后壁示一斜行细线状钡影。appear linear




线形溃疡：
胃体后壁偏小弯侧示一线状钡影，其一端膨大呈类圆形－蝌蚪状线形溃疡。

# Duodenal Ulcer

（1）More than 90％ located in duodenal bulb, most in the anterior or posterior wall

（2）Crater: round,ovoid

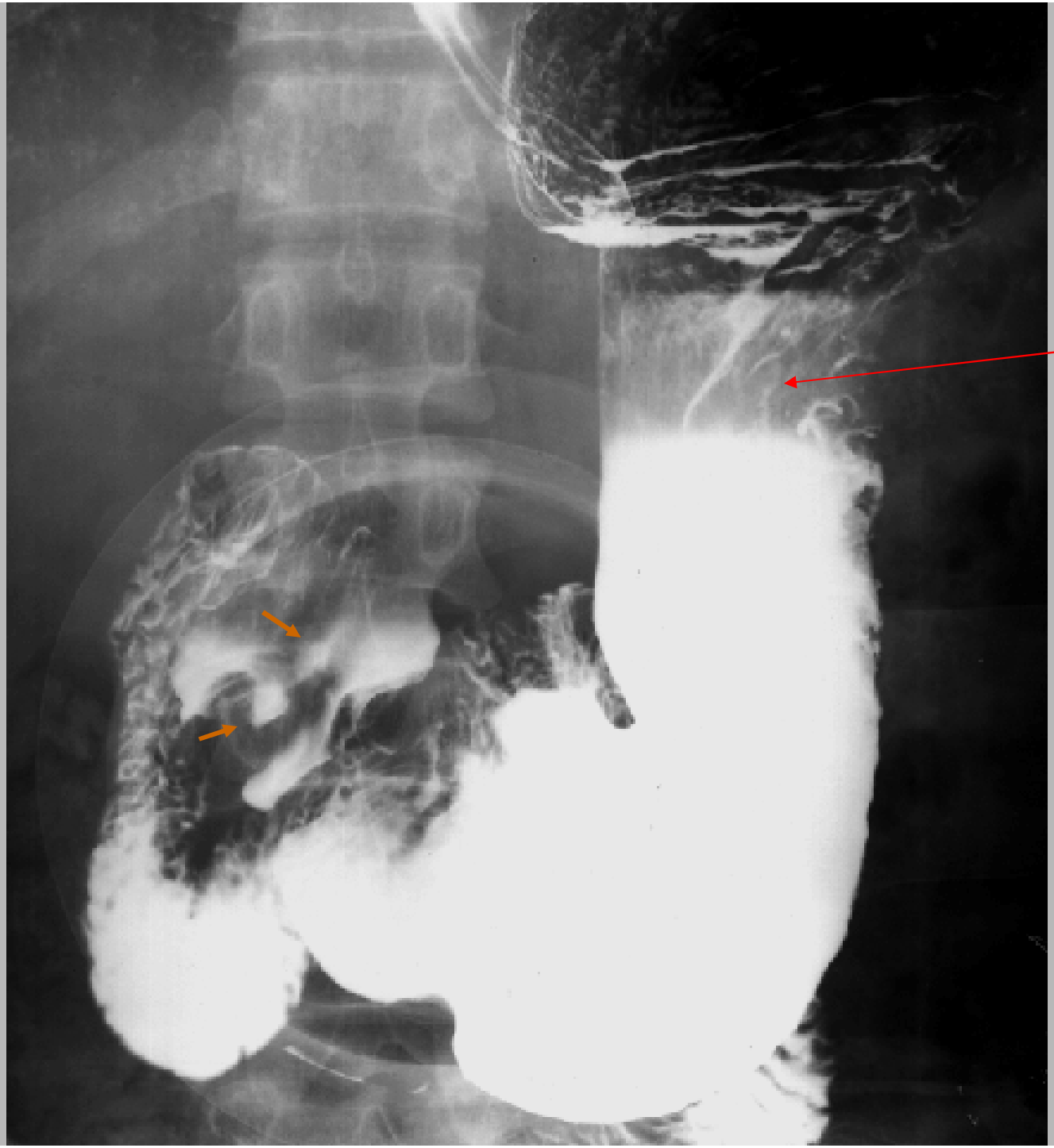
Folds radiating to edge of ulcer

（3）Deformation of the bulb

（4）Irritation sign、pylorospasm、gastric secretion increased and change of tension

（5）Tenderness on bulb

十二指肠球部溃疡：
双对比相示十二指肠球部中央一类圆形钡斑。

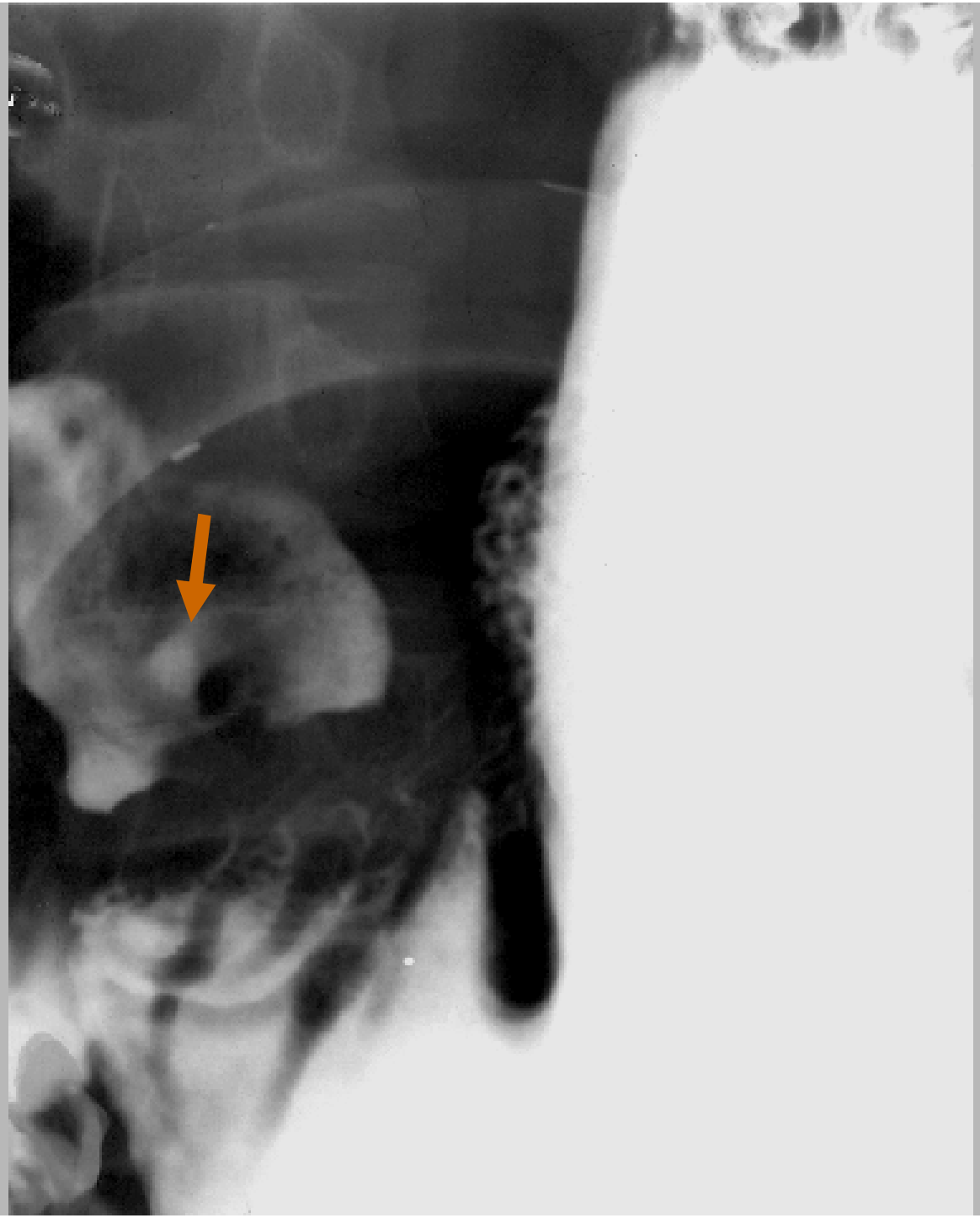


Secretion

increased

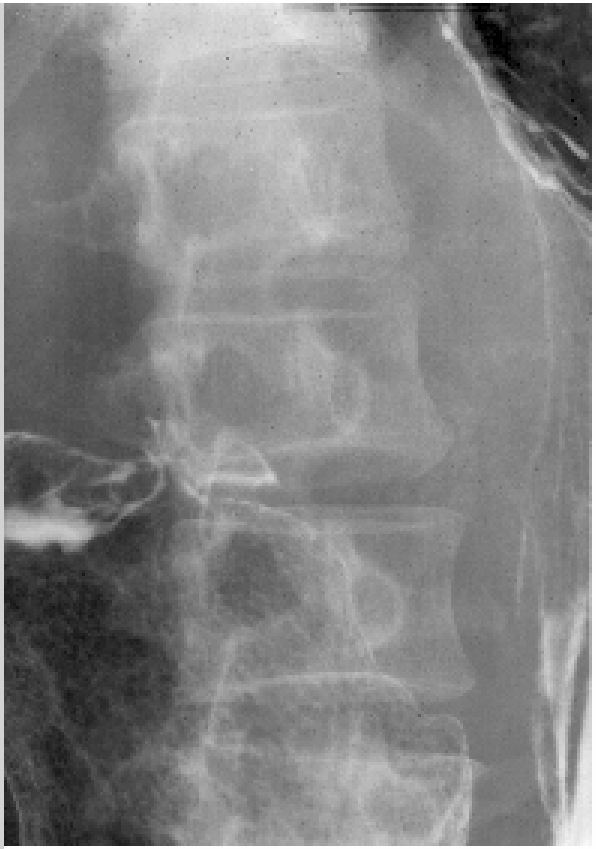
十二指肠球部溃疡：

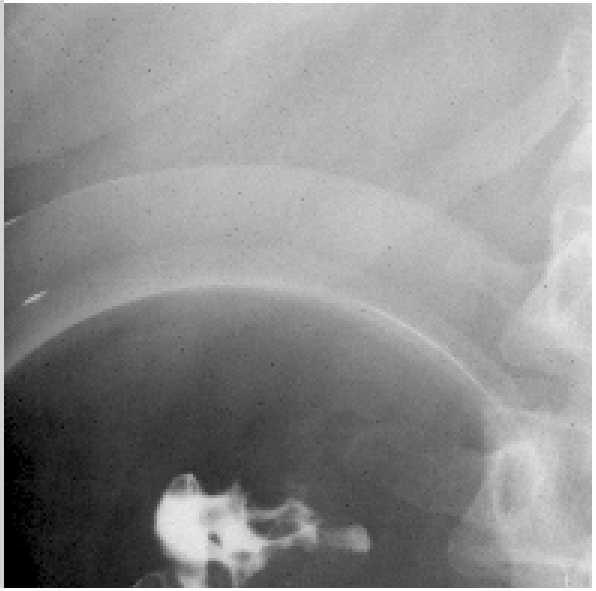
压迫相示十二指肠球部两个钡斑－球部多发溃疡。



十二指肠球部溃疡：
压迫相示十二指肠球内钡斑。

复合溃疡：胃幽门口和十二指肠球内各示一钡斑，十二指肠球部变形不规则。





十二指肠球部溃疡：

十二指肠球部溃疡变形的不同形态。

# 胃癌

分型：蕈伞型；浸润型；溃疡型

X线：1）充盈缺损

2）胃腔狭窄，胃壁僵硬

3）龛影——位于胃的轮廓之内，不规则半月形，内缘有尖角

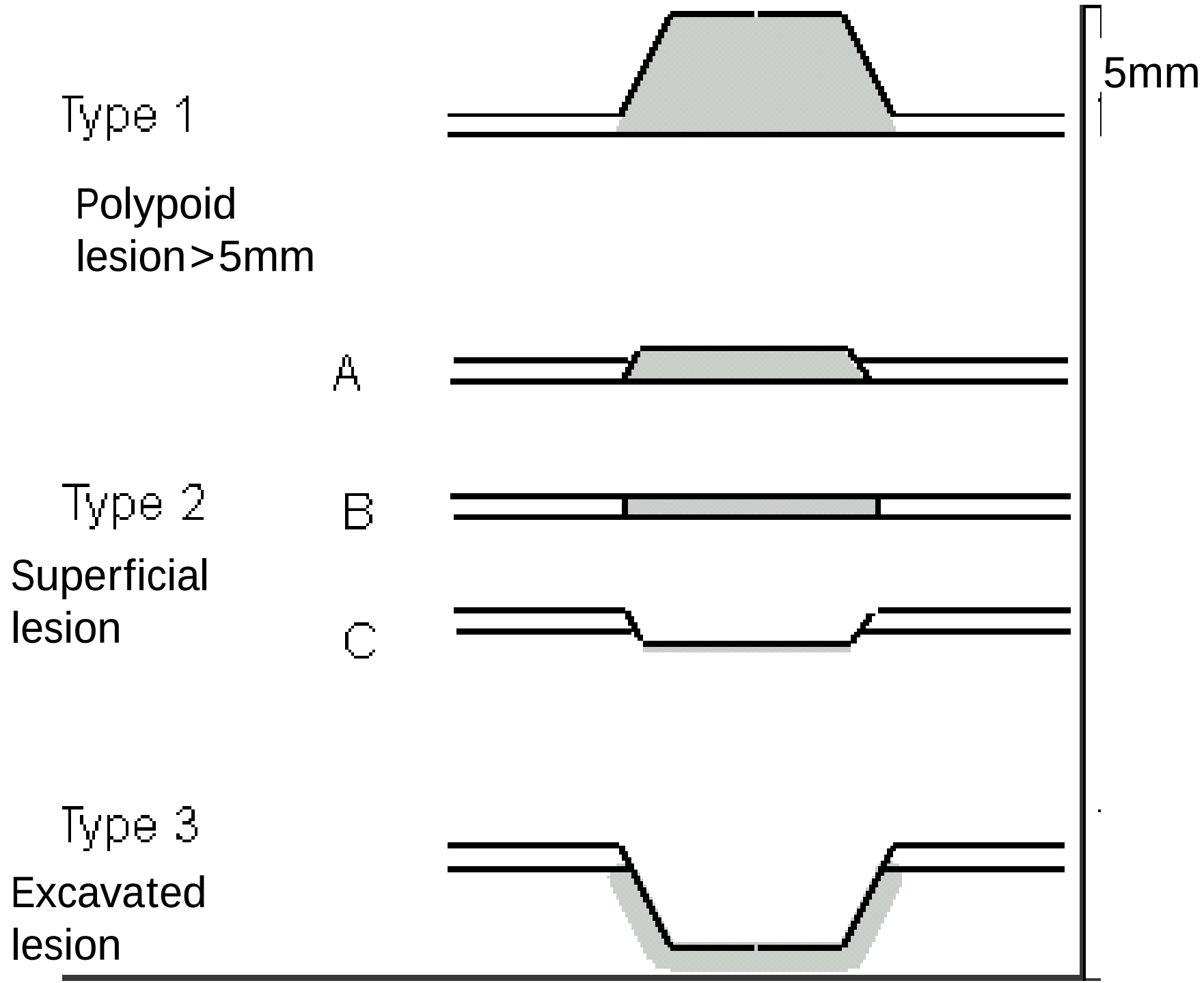
龛影周围：环堤、结节状和指状压迹

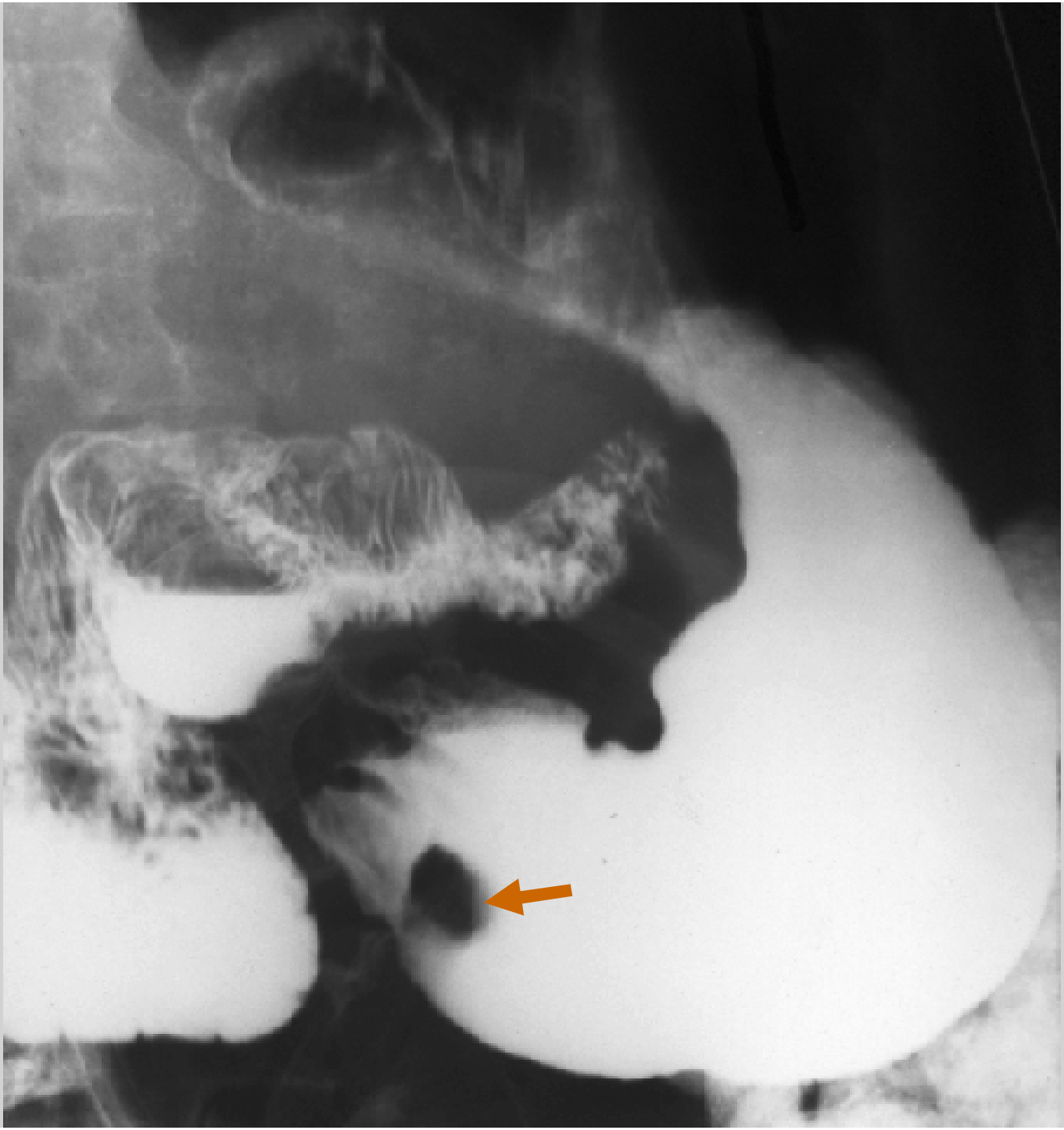
4）粘膜皱襞破坏消失

5）癌病区蠕动消失

# Features of early gastric cancer:

Carcinomas restricts in mucosa or submucosa


Type 1
Polypoid lesion>5mm
5mm
A
Type 2
B
Superficial lesion
C
Type 3
Excavated lesion

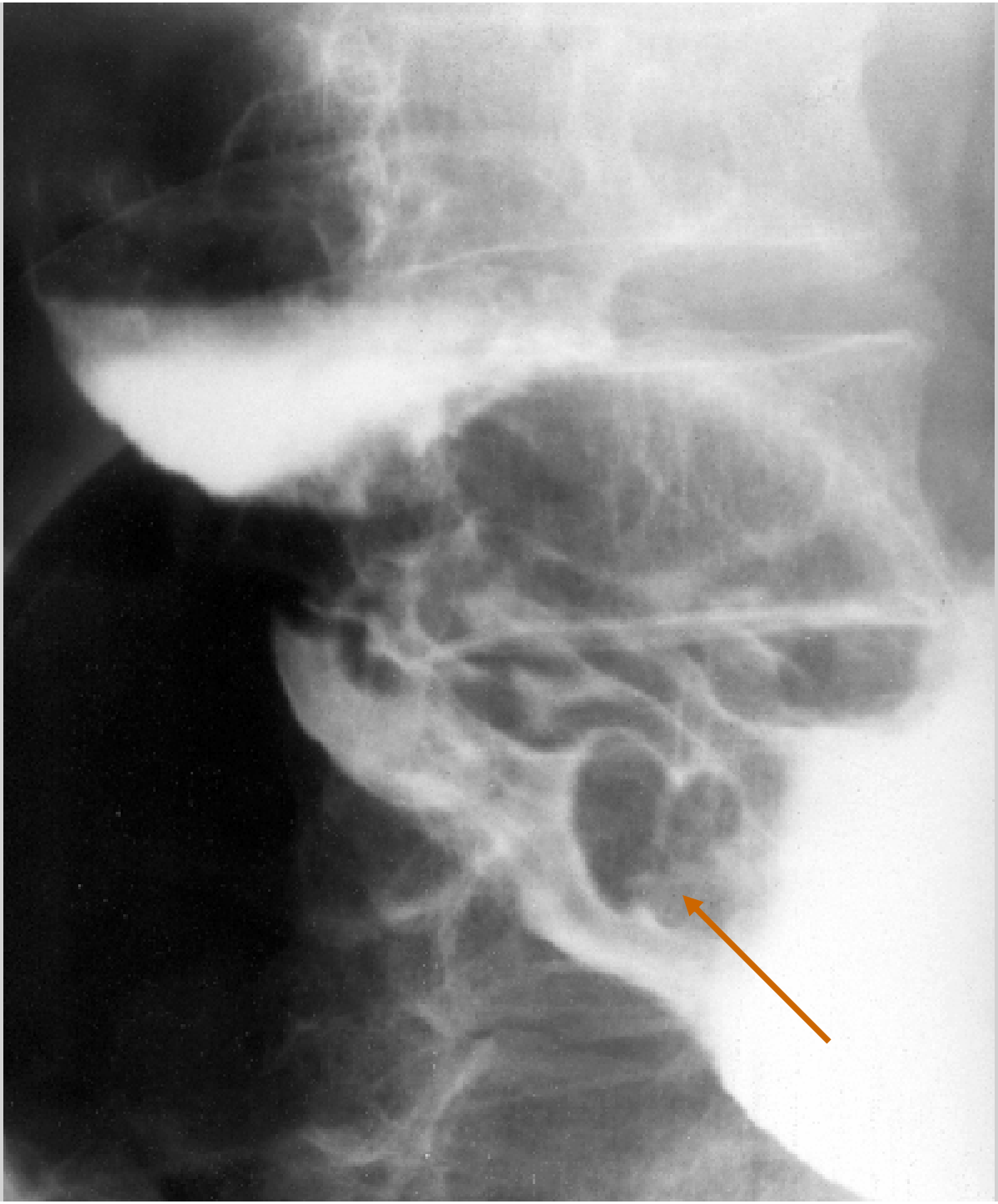


Type Ⅰ

filling defect

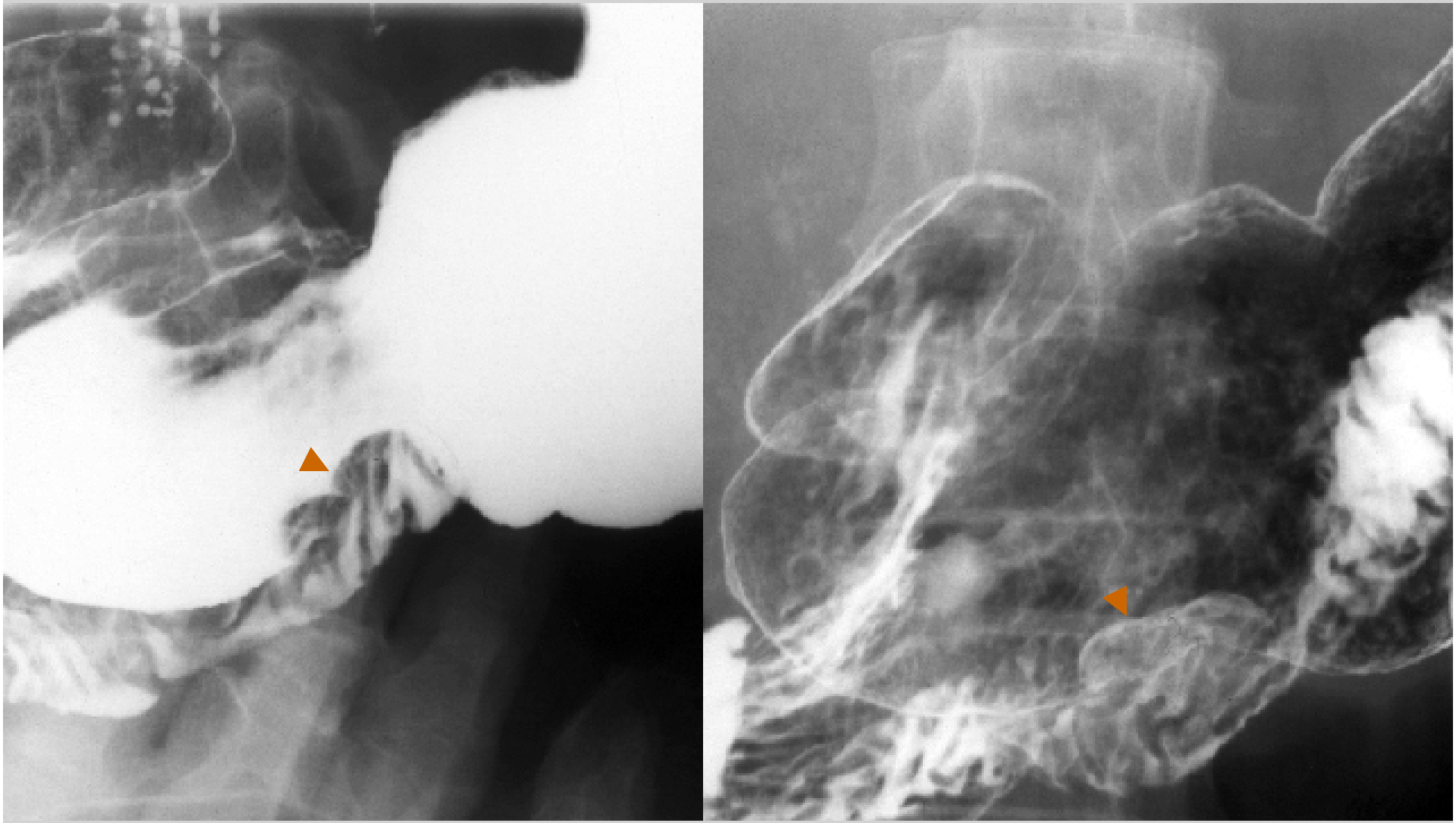
早期胃癌：

胃窦大弯侧示一充盈缺损，形态不规则，基底部较窄 -Ⅰ型早期胃癌 。



Type Ⅰ
Polypoid lesion

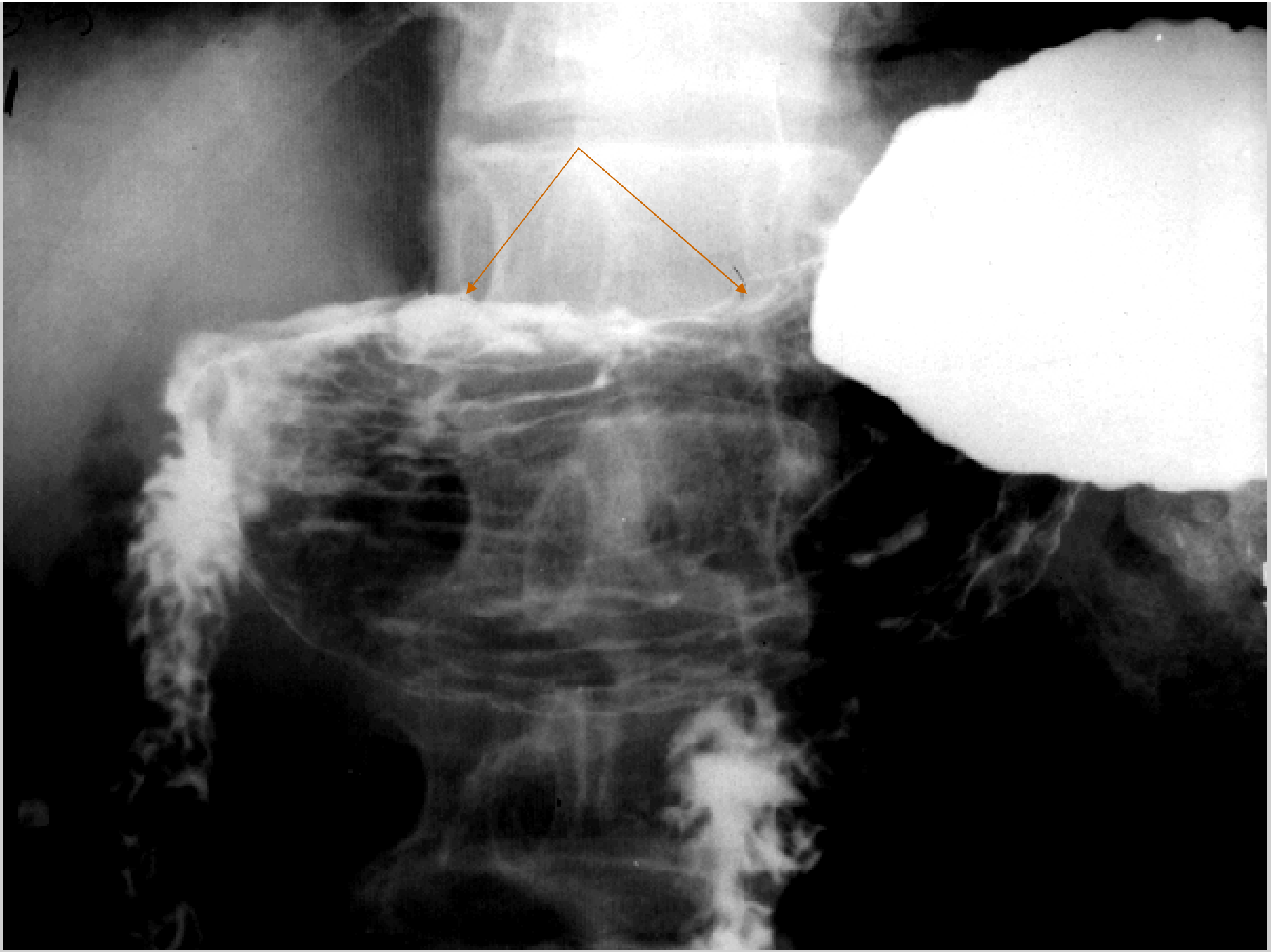
早期胃癌：
胃窦部示一隆起透光影，境界清楚，形态不规，呈分叶外观 --Ⅰ型早期胃癌 。



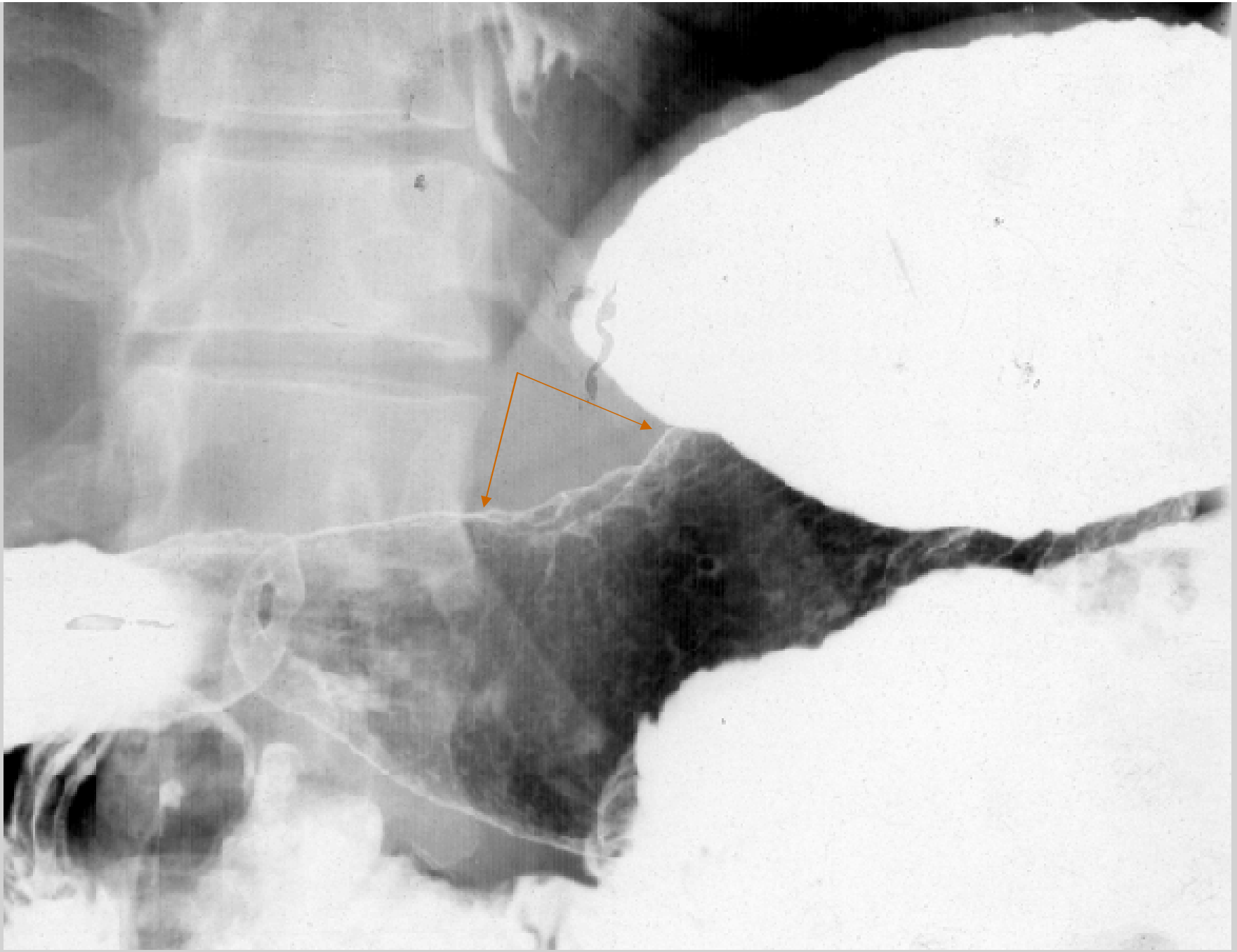
Type Ⅱa Superficial lesion

早期胃癌：

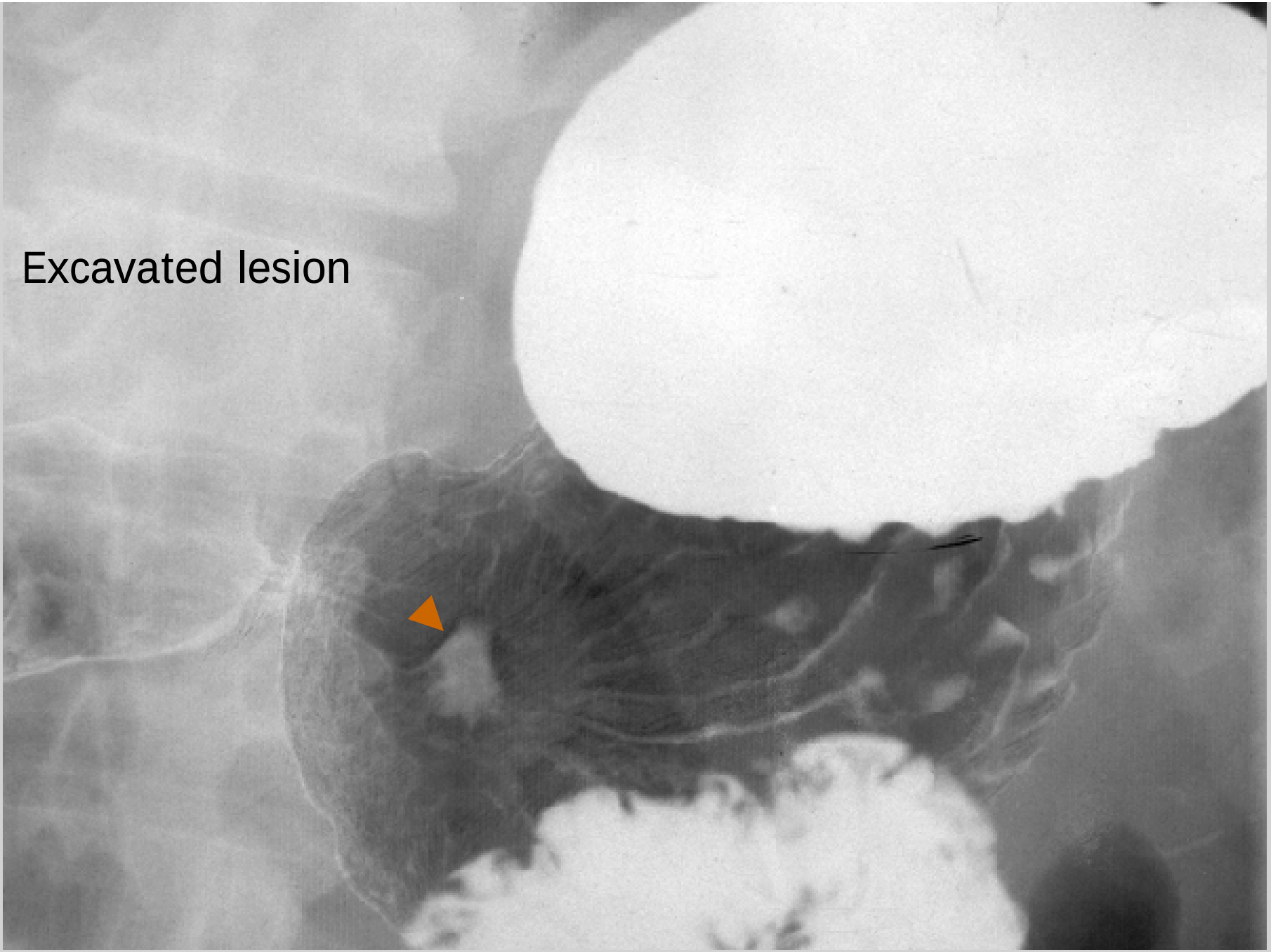
压迫像胃窦大弯示一分叶状充盈缺损；双对比像示该部扁块状软组织肿物影--IIa型早期胃癌。



早期胃癌：胃角区小弯轮廓线毛糙不规，胃壁伸展不良，粘膜结构粗乱--IIb型早期胃癌。



早期胃癌：胃窦小弯轮廓不规，胃壁轻微伸展不良，形成双重轮廓线，局部胃小区破坏消失--IIc型早期胃癌。




早期胃癌：胃窦后壁示一浅淡积钡区，其中心钡影浓密，外周粘膜纹纠集 --IIc+III型早期胃癌 。

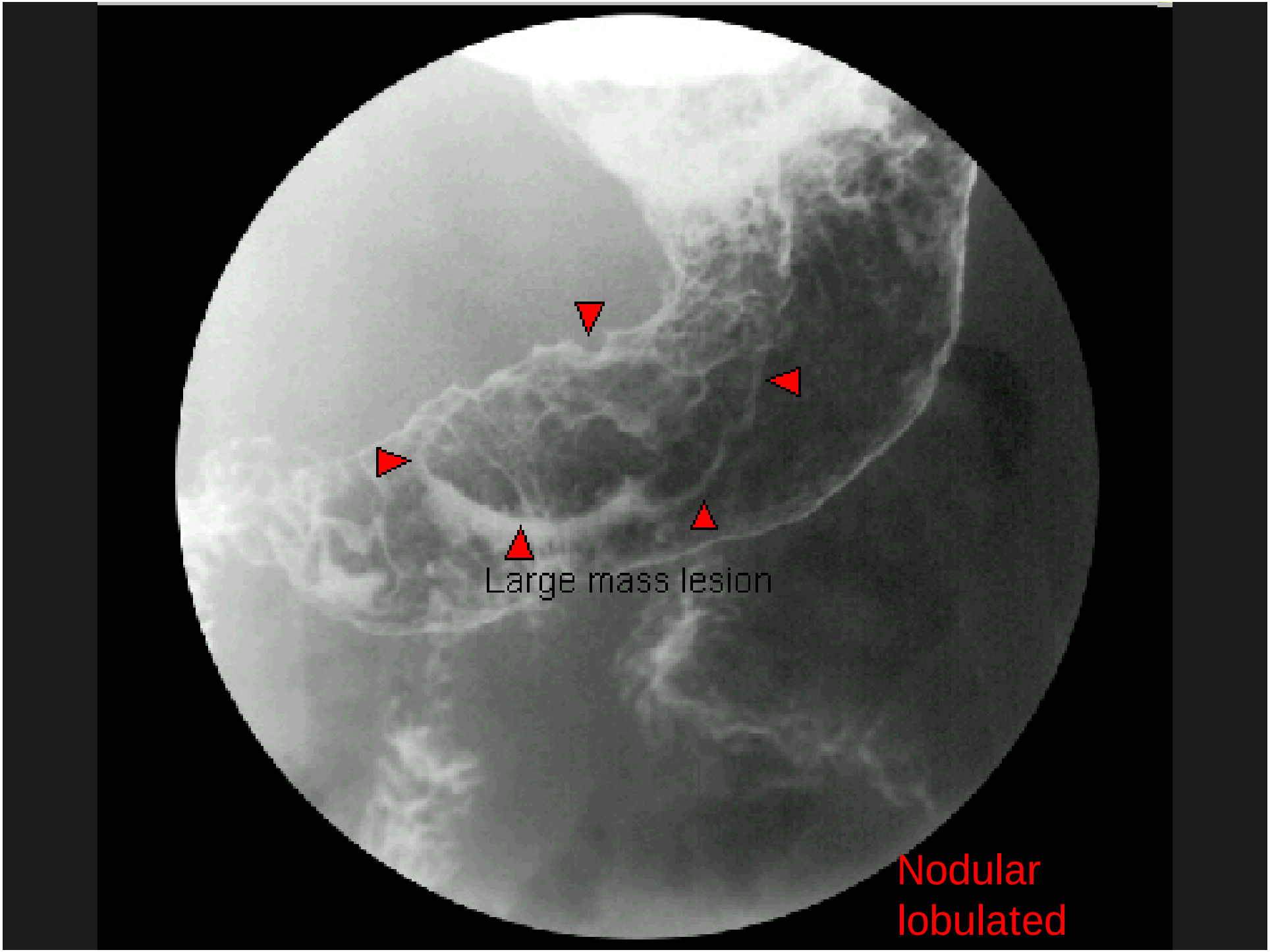
# Carcinoma of the Stomach

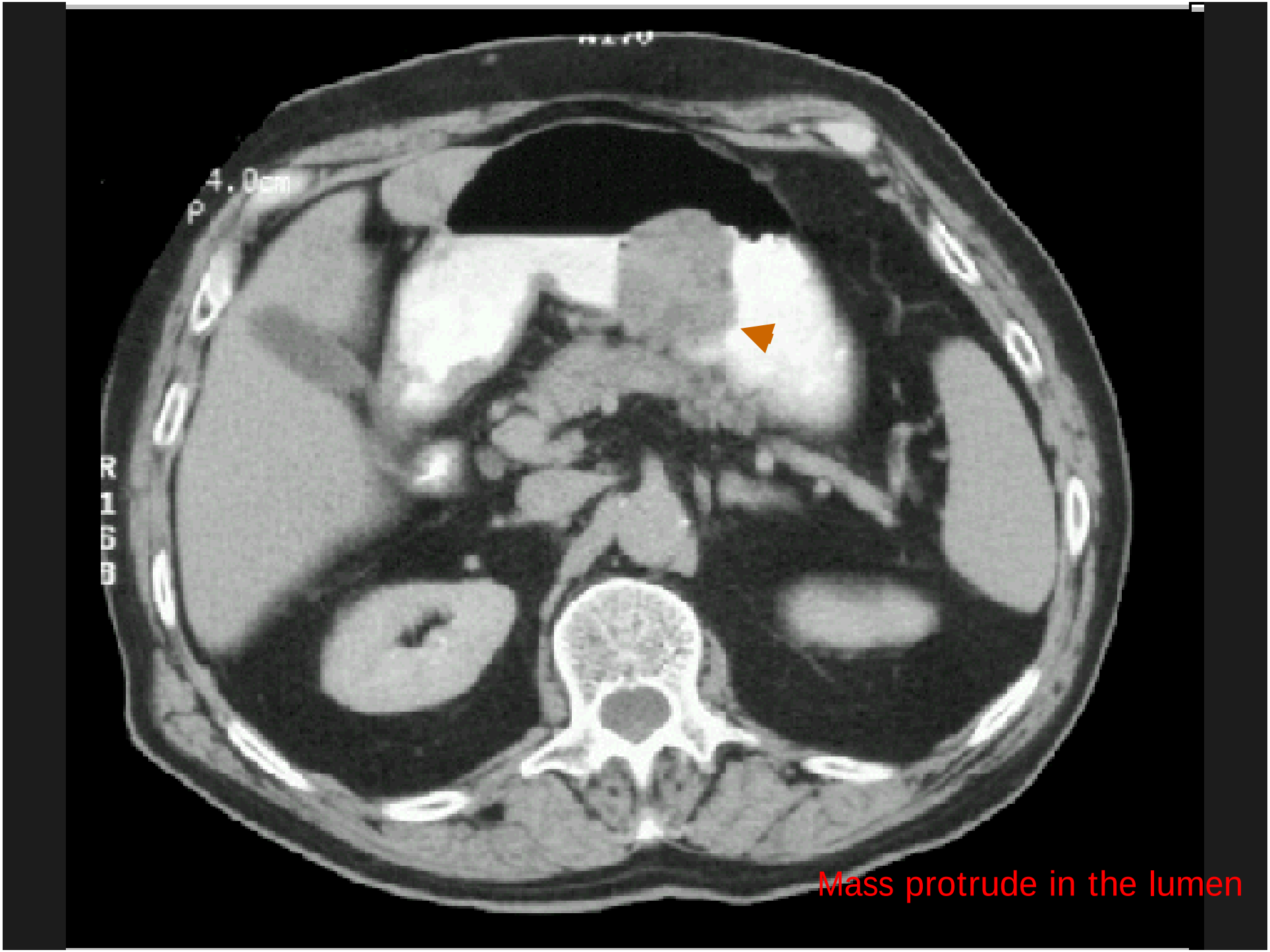
Advanced gastric carcinoma

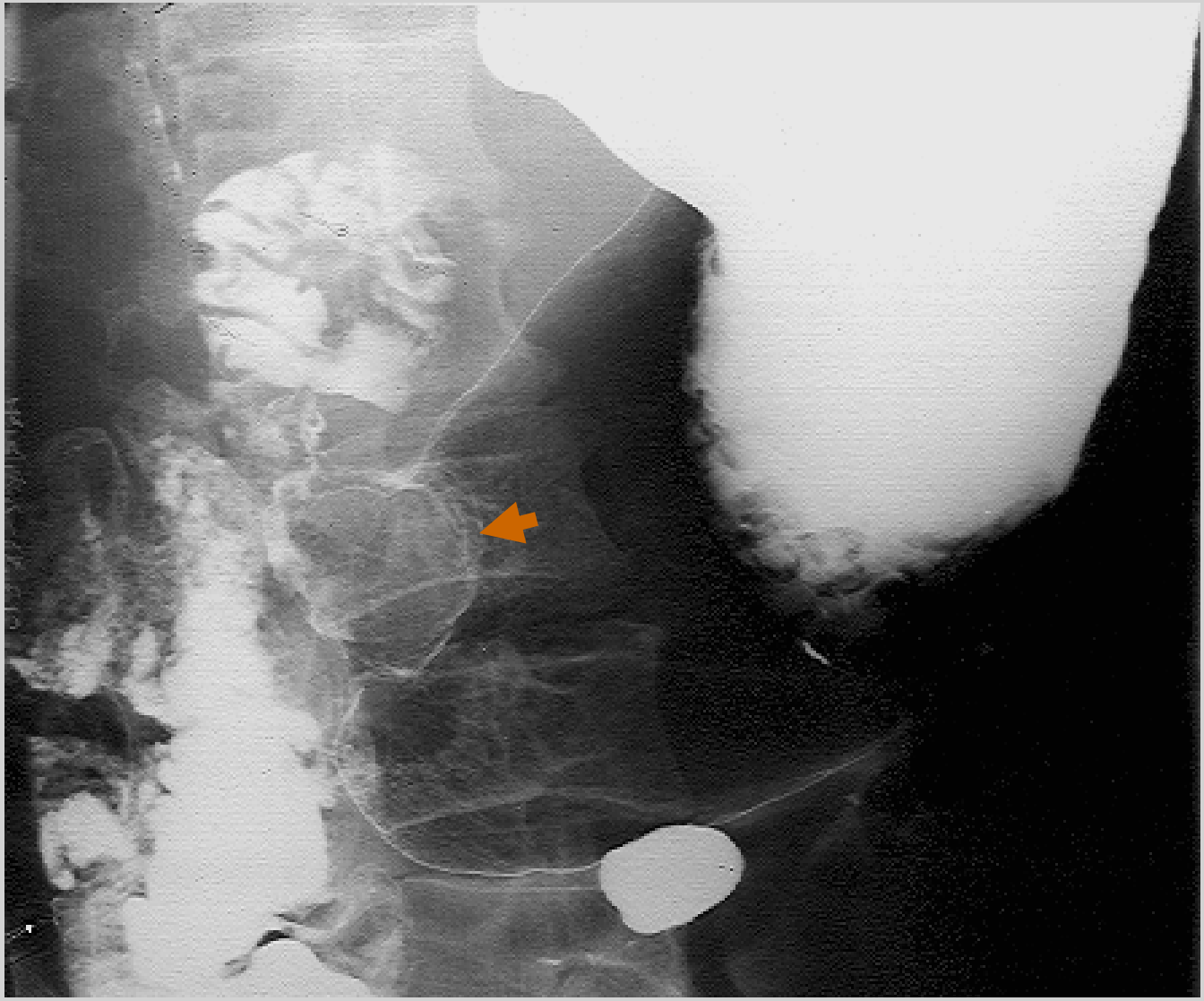
- Polypoid/fungating carcinoma
- Ulcerating/penetrating carcinoma (70%)
- Infiltrating/scirrhous type=linitis plastica

# Carcinoma of the Stomach

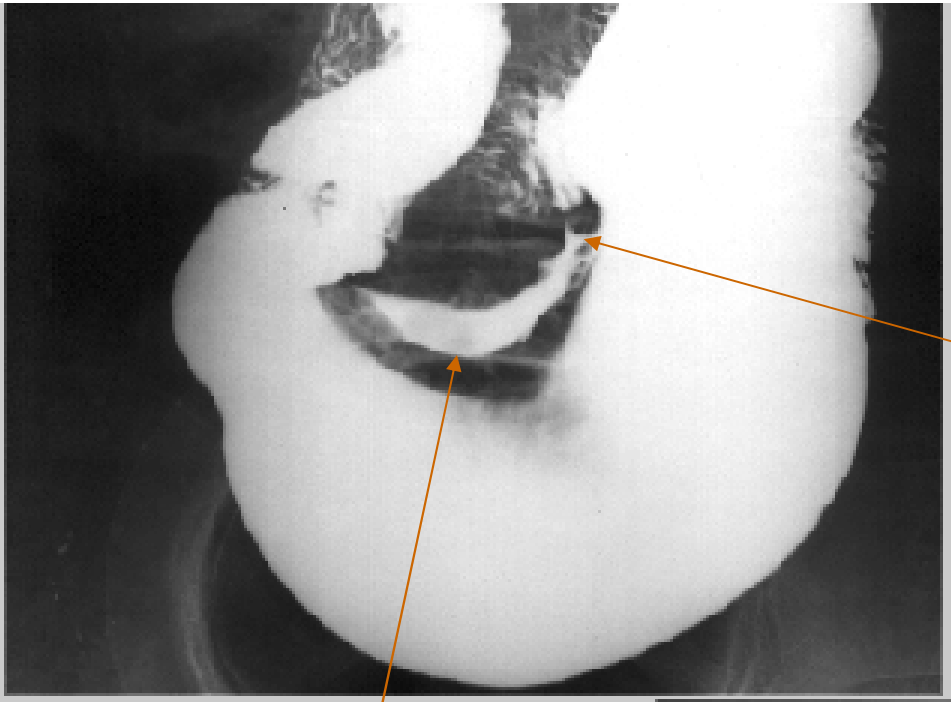
- **Malignant ulcer**—benign ulcer but demonstrate microscopic foci of malignancy, usually at the edge of the ulcer
- **Ulcerating malignancy**—is a carcinoma present as a mass which also contains a persistent collection representing an ulcer; the mucosa is frequently nodular and the folds do not radiate to the base of the ulcer
- **Linitis plastica (scirrhous carcinoma)**—is a diffuse involvement of the wall of the stomach, frequently with flattening of the mucosa, and poor distensibility and contraction of the wall; usually associated with significant fibrosis and muscular hypertrophy; very frequently a *signet ring cell* type


Large mass lesion
Nodular
lobulated


Mass protrude in the lumen



胃癌：胃窦腔狭窄，其内示一隆起肿块影，形态不规，略有分叶--蕈伞型胃癌（Borr1 型）。

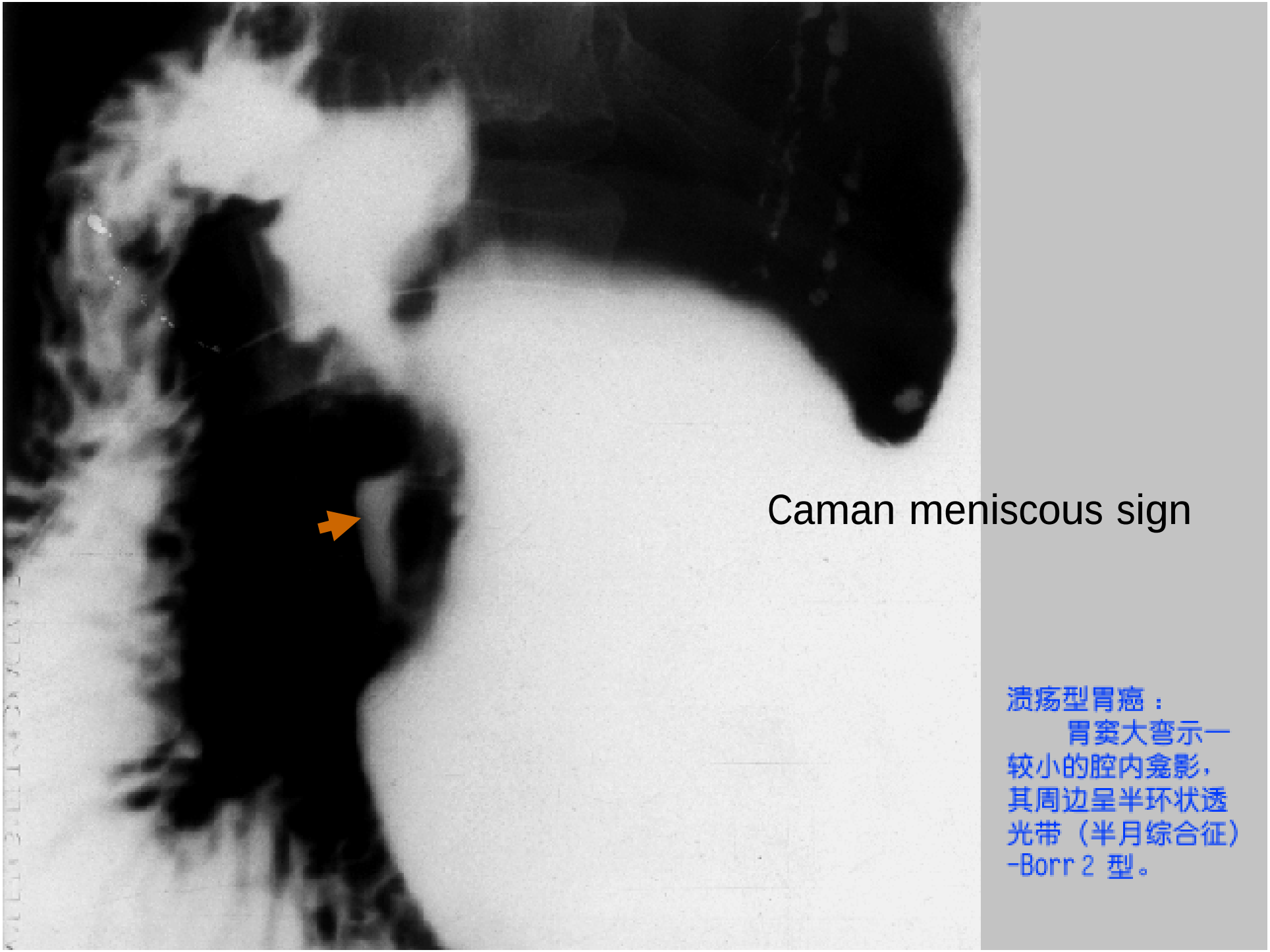


**cusp angle**

Caman meniscous sign

溃疡型胃癌：

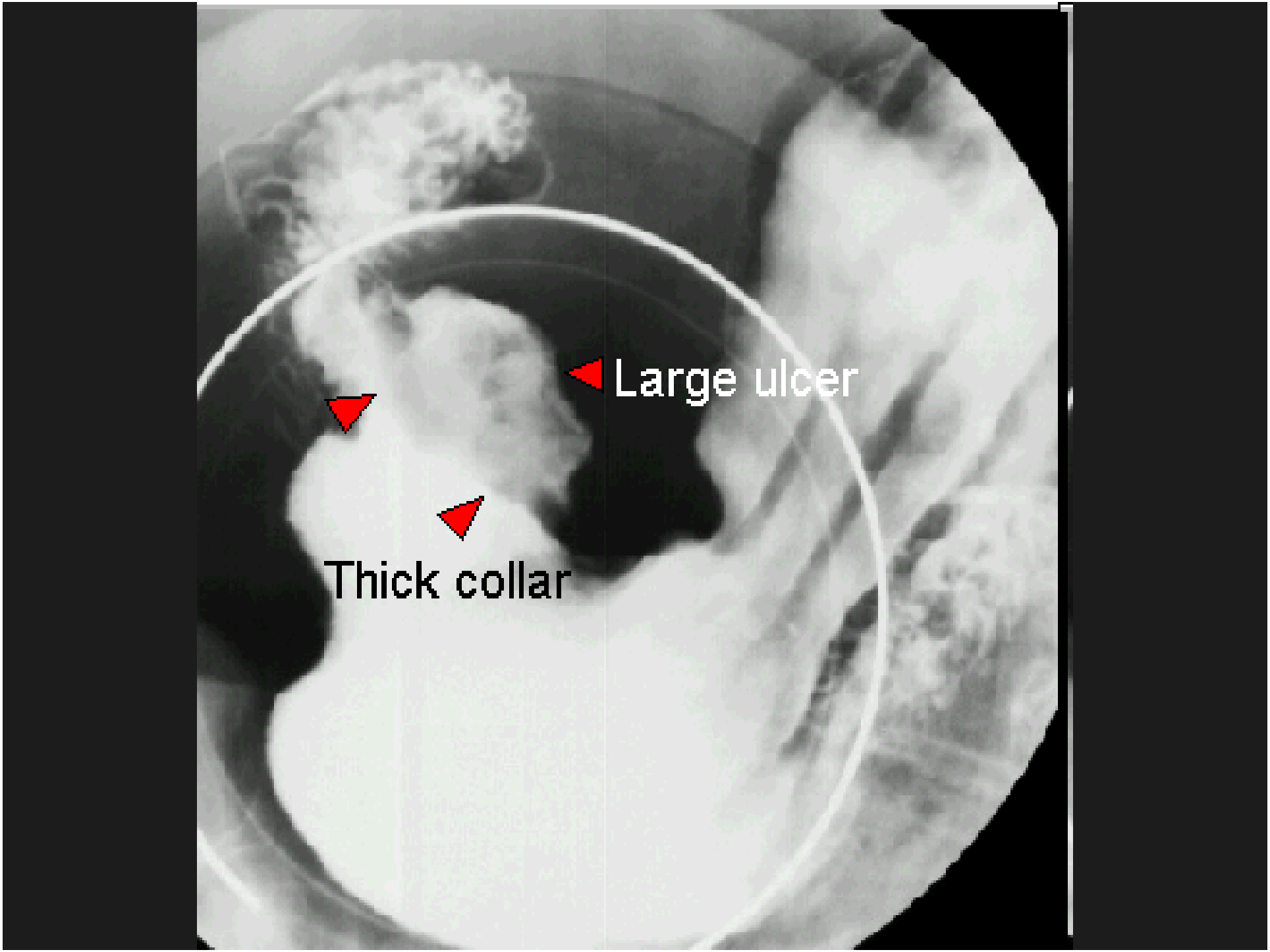
胃角、窦部小弯侧示一腔内龛影，呈半月形，其周围绕以半环状透亮带（环堤） --半月综合征。



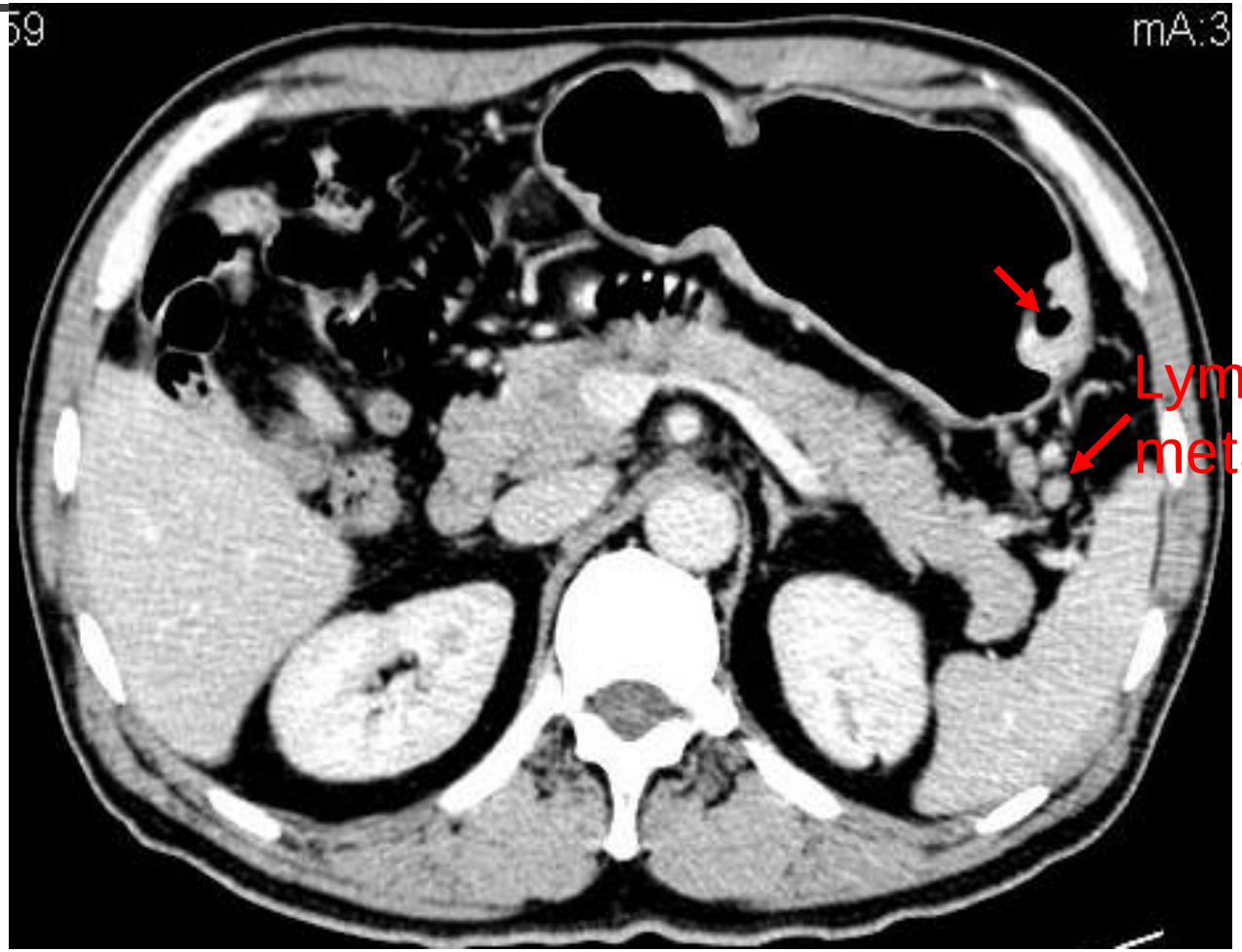
Caman meniscous sign

溃疡型胃癌：
胃窦大弯示一较小的腔内龛影，其周边呈半环状透光带（半月综合征）-Borr 2 型。

溃疡型胃癌：
以胃角区为中心，示一较大凹陷型病变，中央侧胃壁伸展不良 - Borr 3 型胃癌。

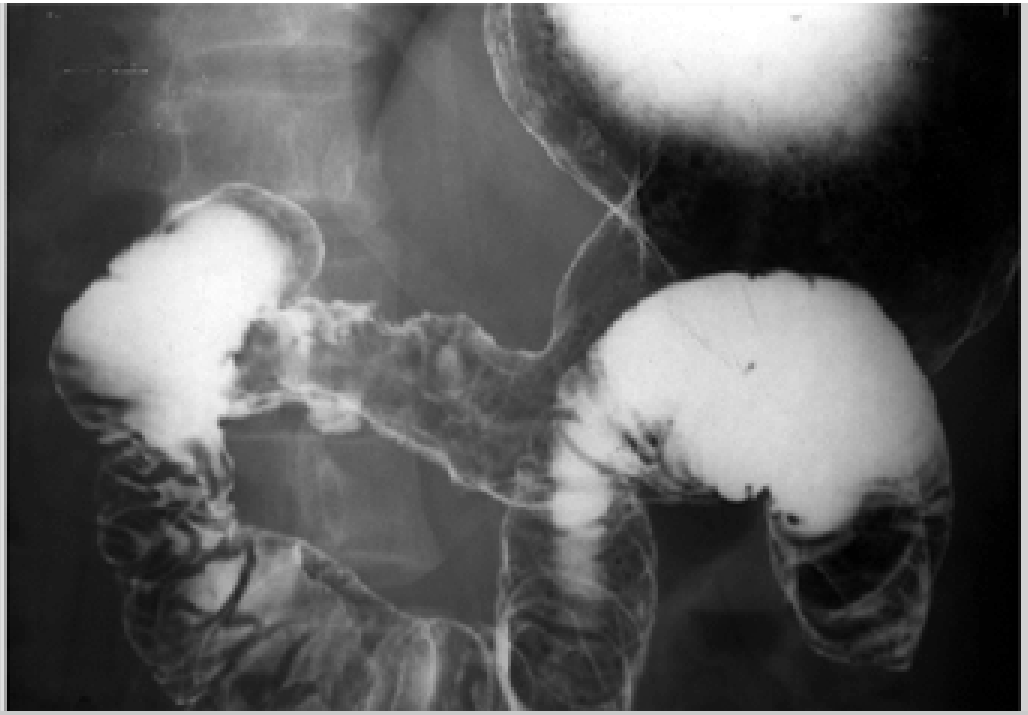

Large ulcer
Thick collar

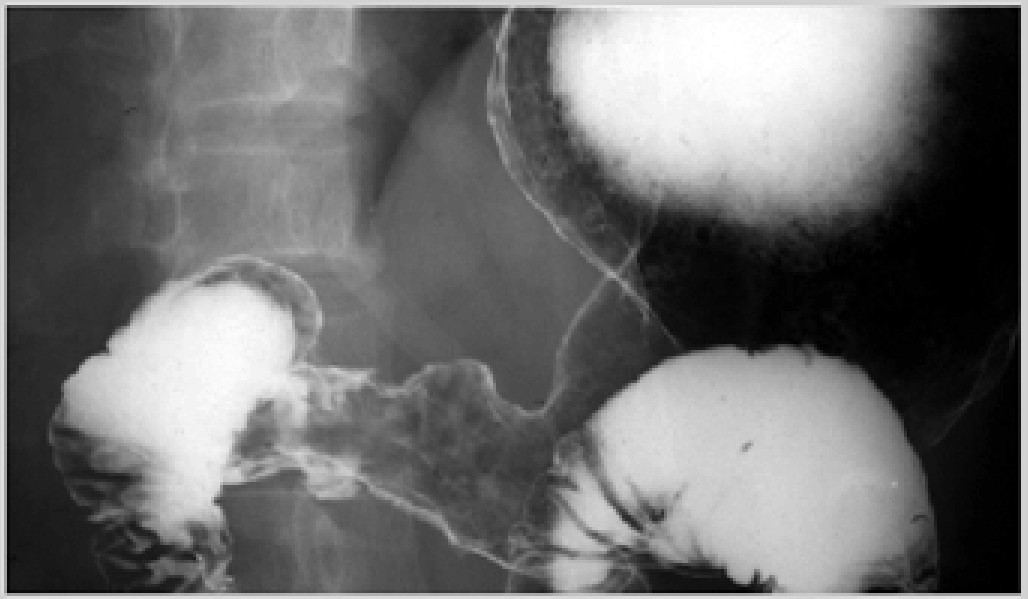
# Ulcerating carcinoma



linitis plastica

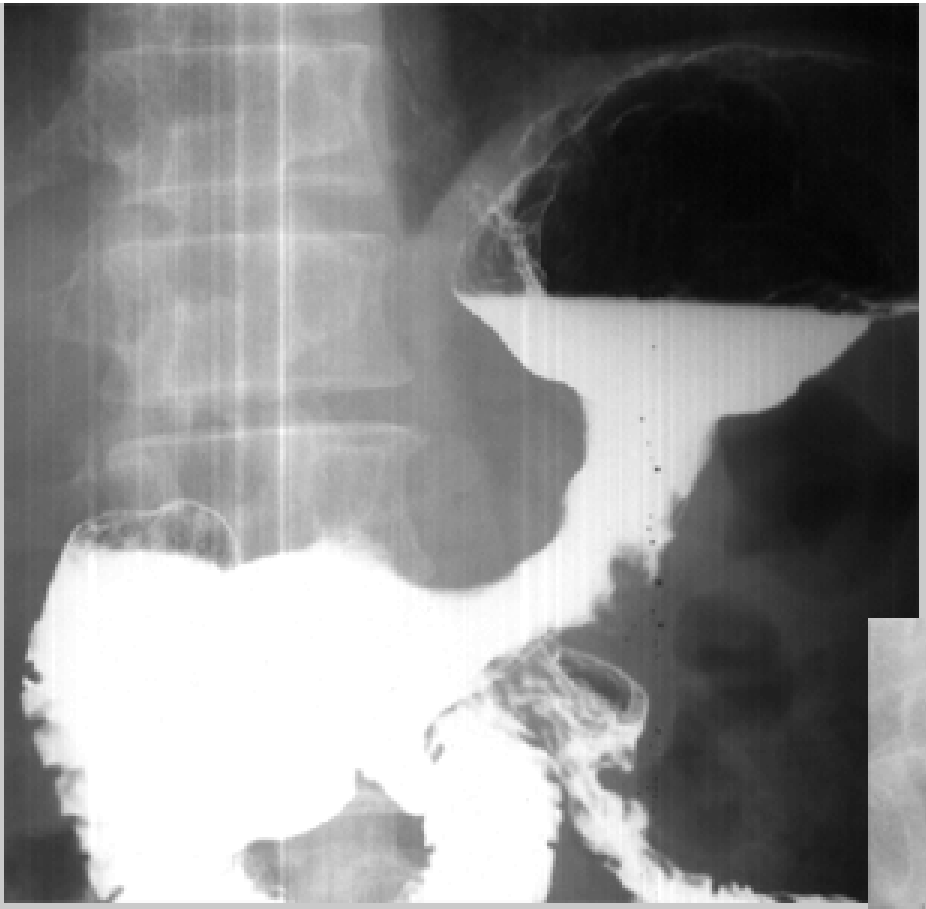
浸润型胃癌

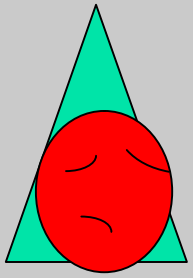




浸润型胃癌：

胃窦部缩窄，边缘不规整（充盈像）。局部粘膜破坏消失，散在多个较小溃疡。





浸润型胃癌（Borr 4 型）：
充盈像示胃体部胃腔明显缩窄，边缘硬韧不规，双对比像示病变区胃腔不能扩张，呈革囊胃外观。

# Differential diagnosis of ulcers

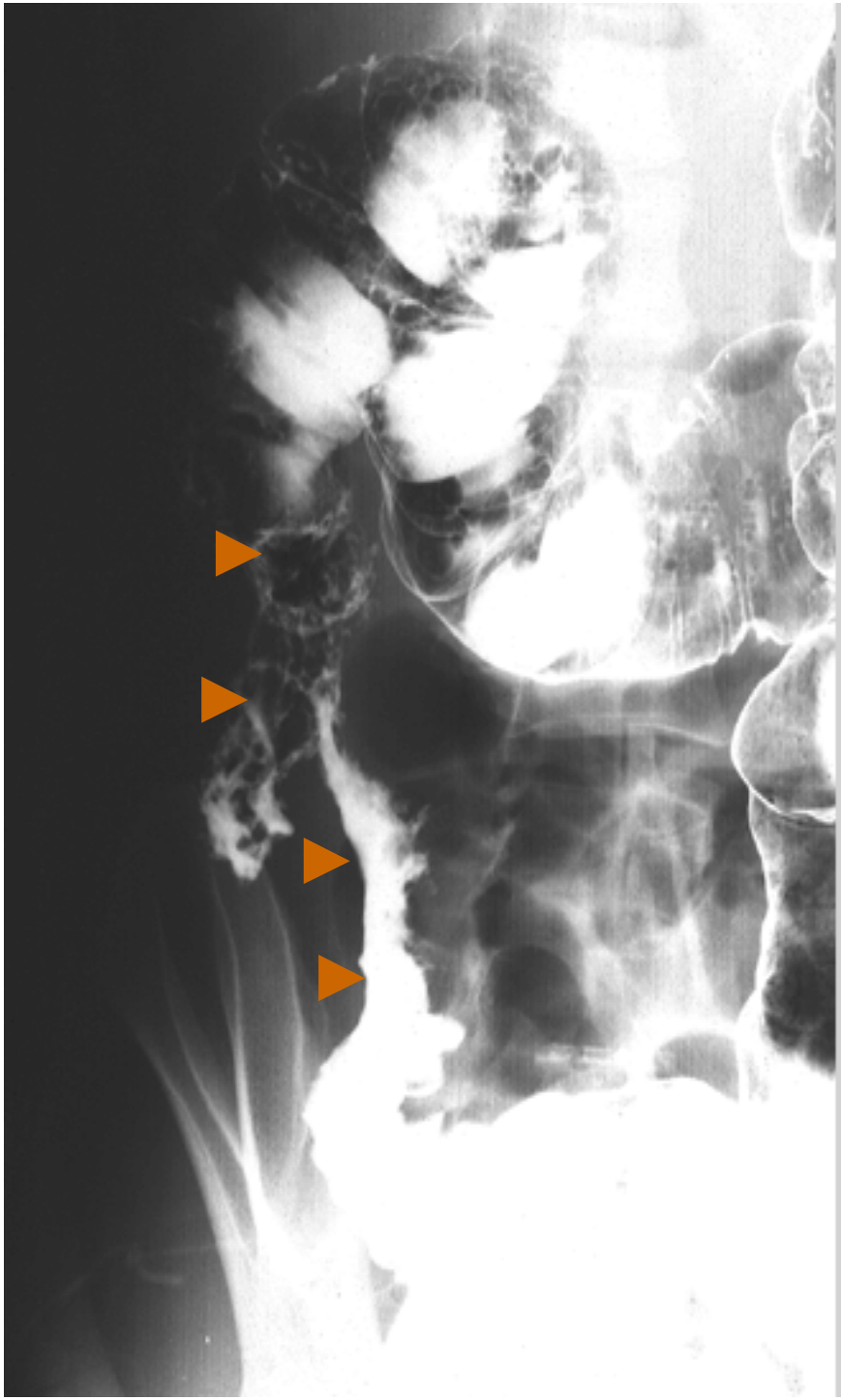
| Parameter | Benign Ulcer | Malignant Ulcer |
|---|---|---|
| Crater | Round, ovoid | irregular |
| Mucosal folds | Thin, regular, extend up to the margin of ulcer crater | Thick, irregular, do not extend to crater edge |
| Penetration | Extends beyond projected Margin of the wall | Ulcers lie within (thickened) wall; Caman meniscous sign |
| Location | Centrally within mound of edema | Eccentrically in tumor mound |
| Collar | Hampton's line: 1-2mm lucent line around the ulcer | Thick, nodular, irregular |
| Other | Normal peristolsis<br>Incisura: invagination of the wall | Abnormal peristalsis<br>Limited distensibility |

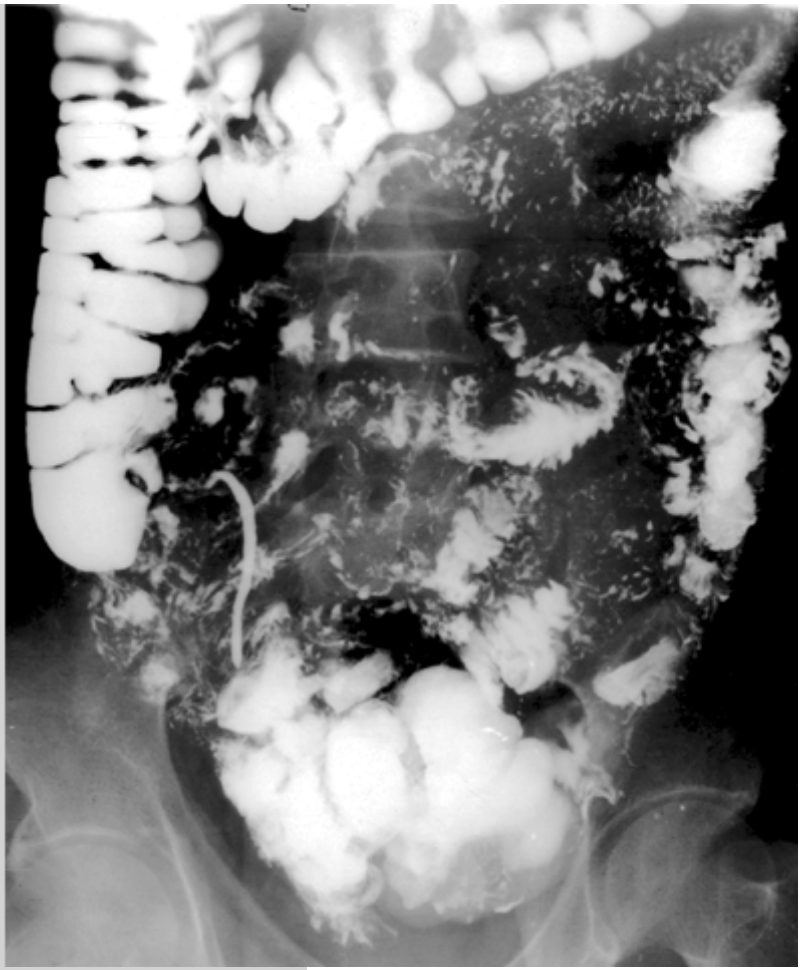
# Tuberculosis of intestine

Position: ileocecal junction

# Tuberculosis of intestine

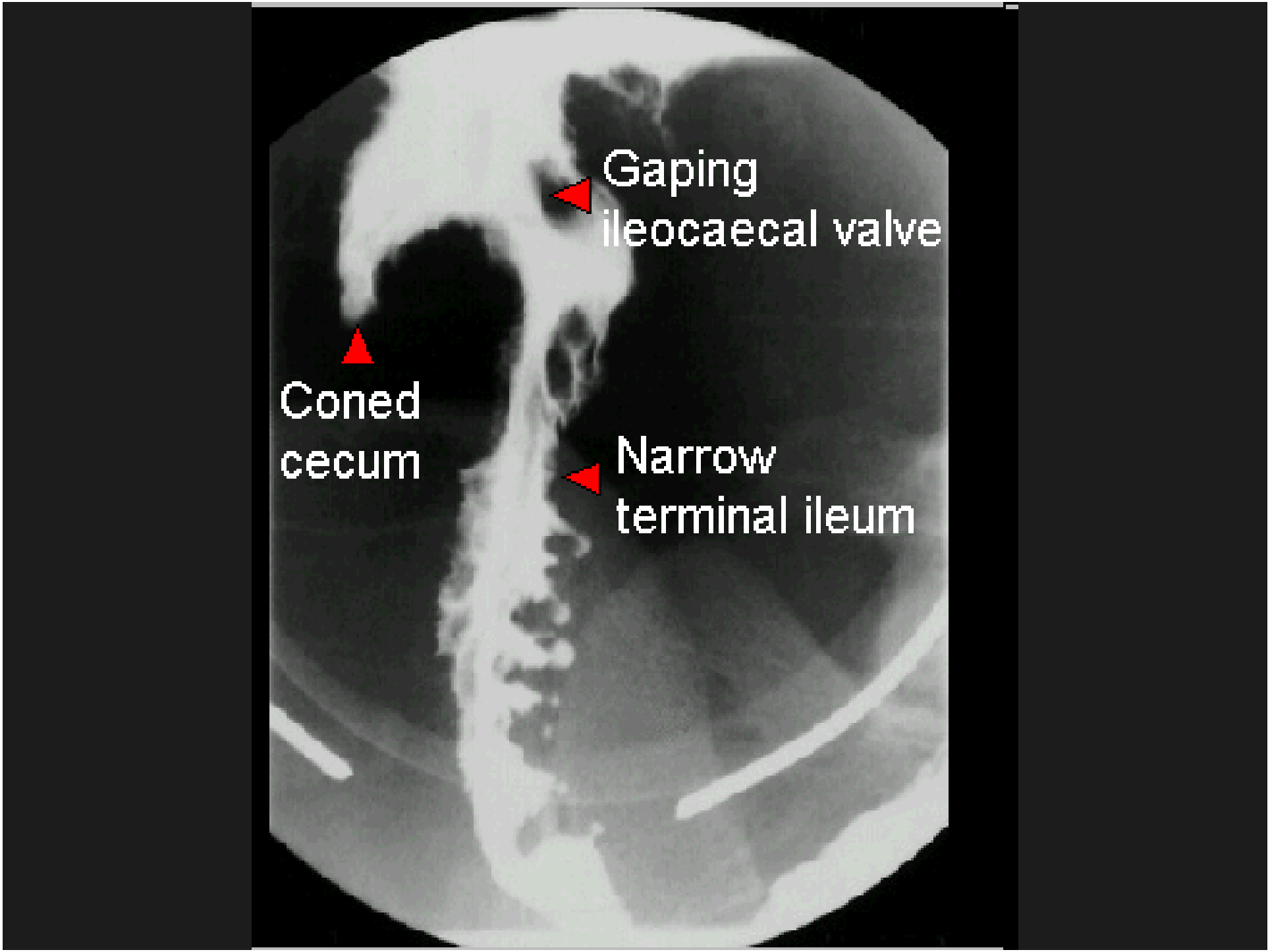
- Spasm and irritability
- Spiculated, serrated bowel margins from tiny, multiple ulcerations
- Coarser, more granular mucosa
- Shortening of the colon, Loss of haustrations on left side of colon
- Postinflammatory polyps=*filiform polyps*=long worm-like lesions

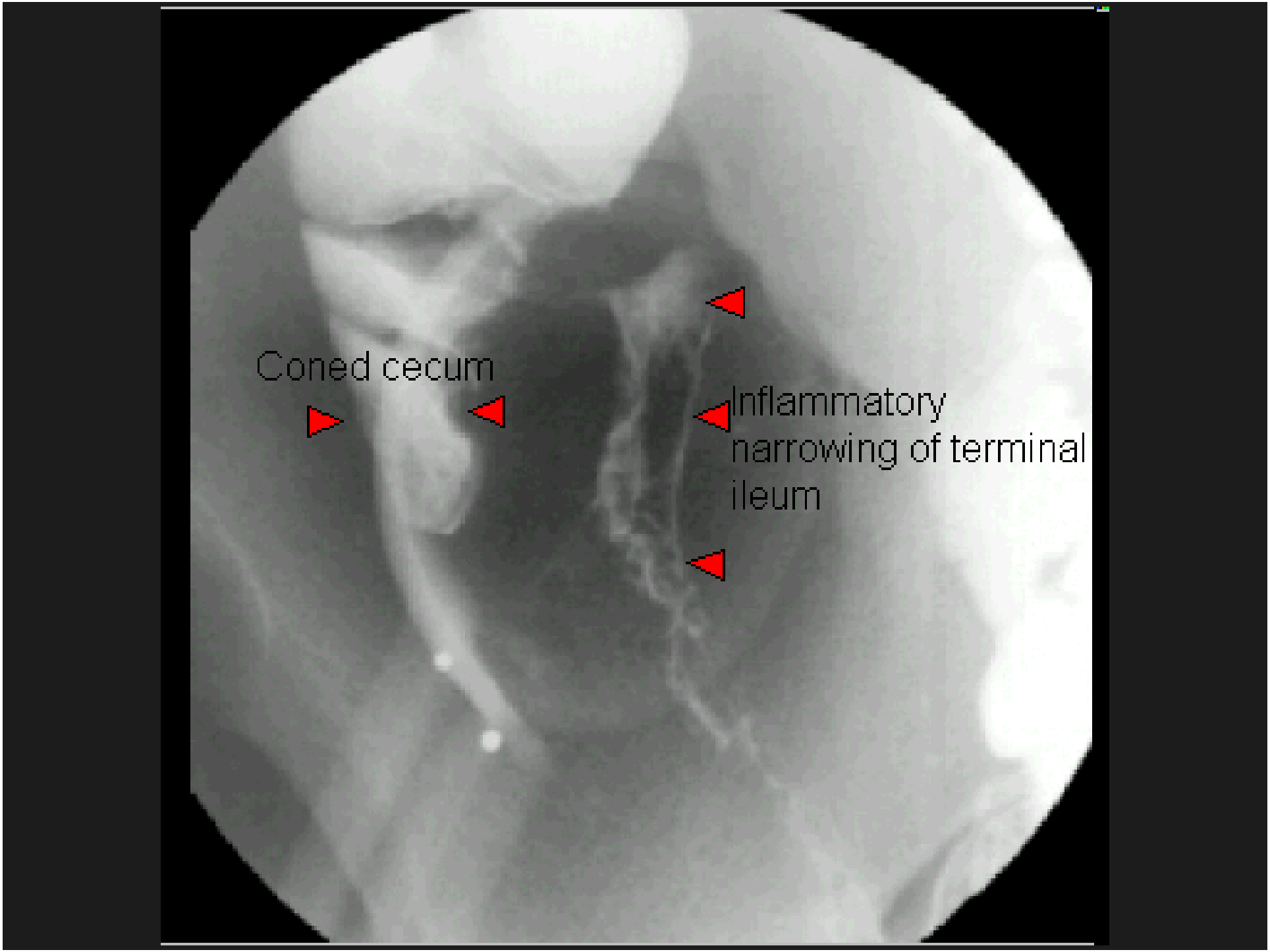




肠结核：

末段回肠、盲肠及升结肠近侧管腔缩窄，边缘不规则，粘膜面粗乱，盲肠粘膜面可见小结节样增生。


Gaping
ileocaecal valve
Coned
cecum
Narrow
terminal ileum


Coned cecum
Inflammatory narrowing of terminal ileum

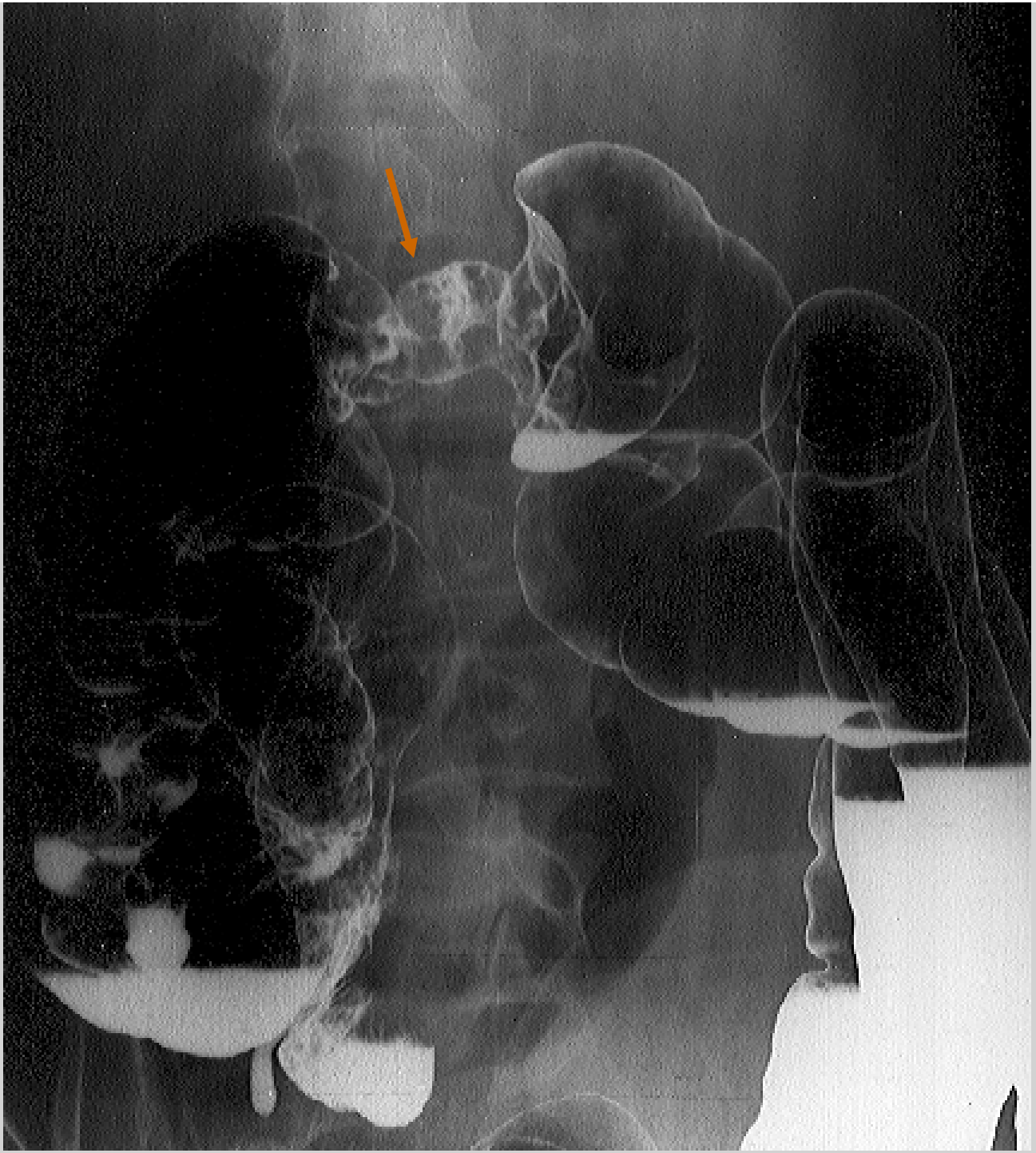
# Colon Carcinoma

Type

- Polypoid form- Polypoid filling defect
- Ulcerating form- irregular ulcer *apple-core*
- Infiltrating  form- Annular constricting

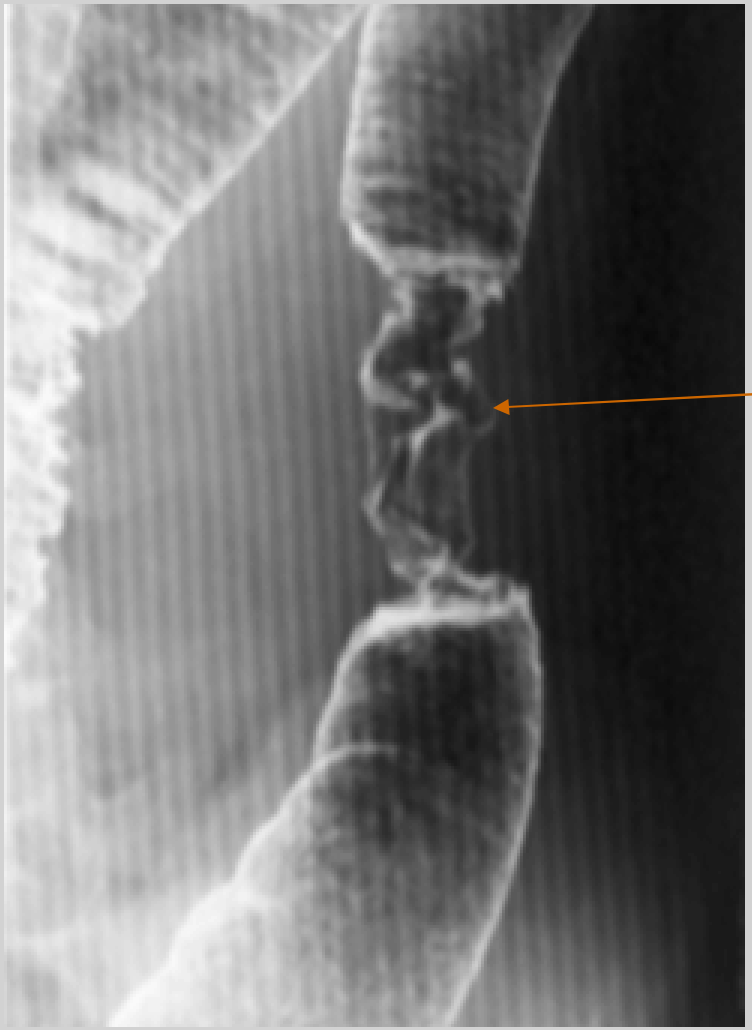
直肠癌：直肠壶腹部示一较大充盈缺损，形态欠规则，
表面不光整 --肿块型（两幅图像为同一病例不同角度）

Polypoid form



Infiltrating form

横结肠癌：横结肠近端管腔明显缩窄，边缘不规则，粘膜结构破坏。

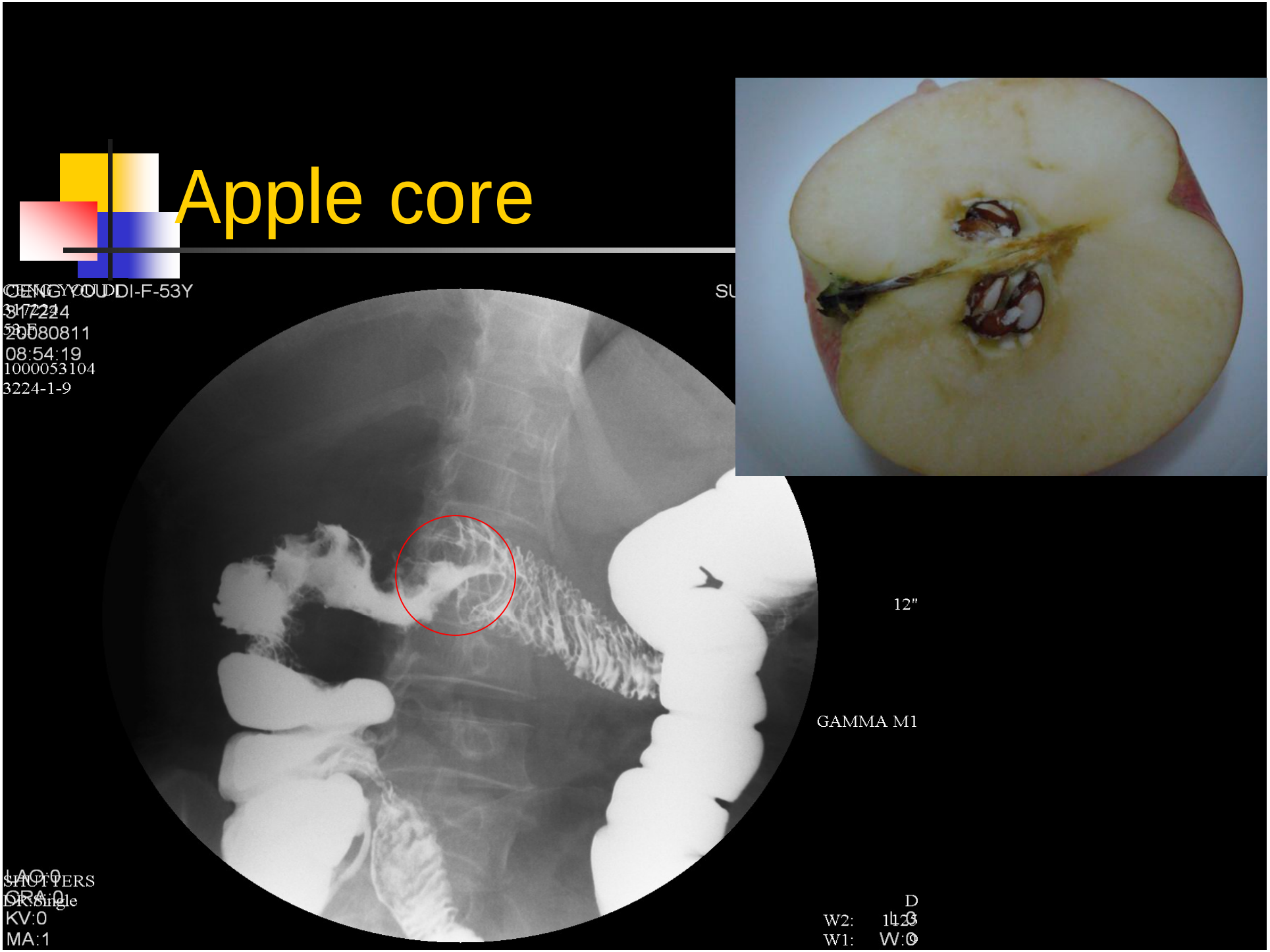


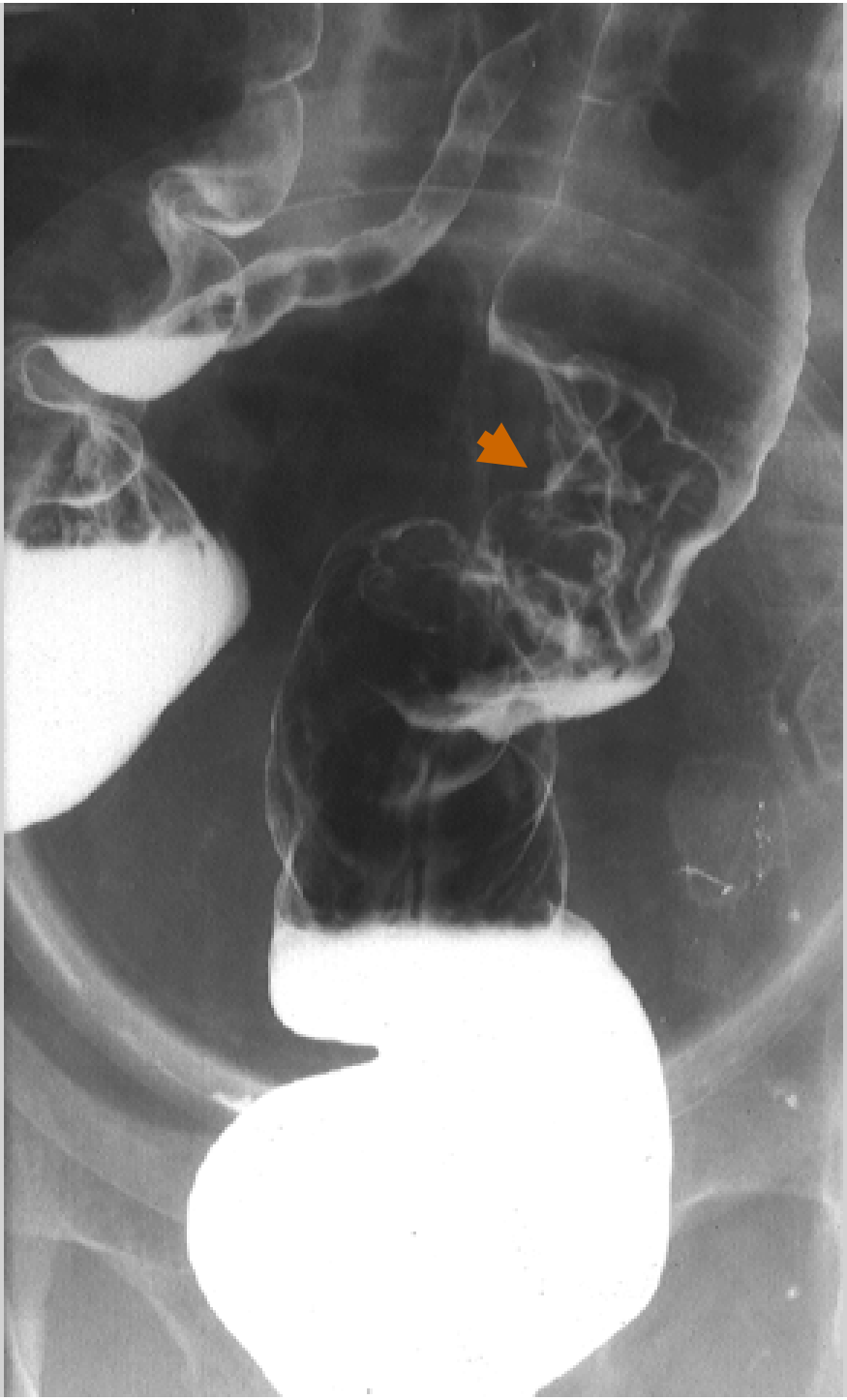
Infiltrating form

结肠癌：降结肠中段管腔明显缩窄，
边缘硬韧不规，缩窄段与正常肠腔界限分明。

# Apple core




CENG YOUDI-F-53Y
317224
20080811
08:54:19
1000053104
3224-1-9
12"
GAMMA M1
SHUTTERS
KV:0
MA:1
W2:
W1:



Ulcerating form

溃疡型结肠癌：
乙状结肠远段示一偏心性缩窄，局部粘膜破坏，溃疡形成，周边隆起。

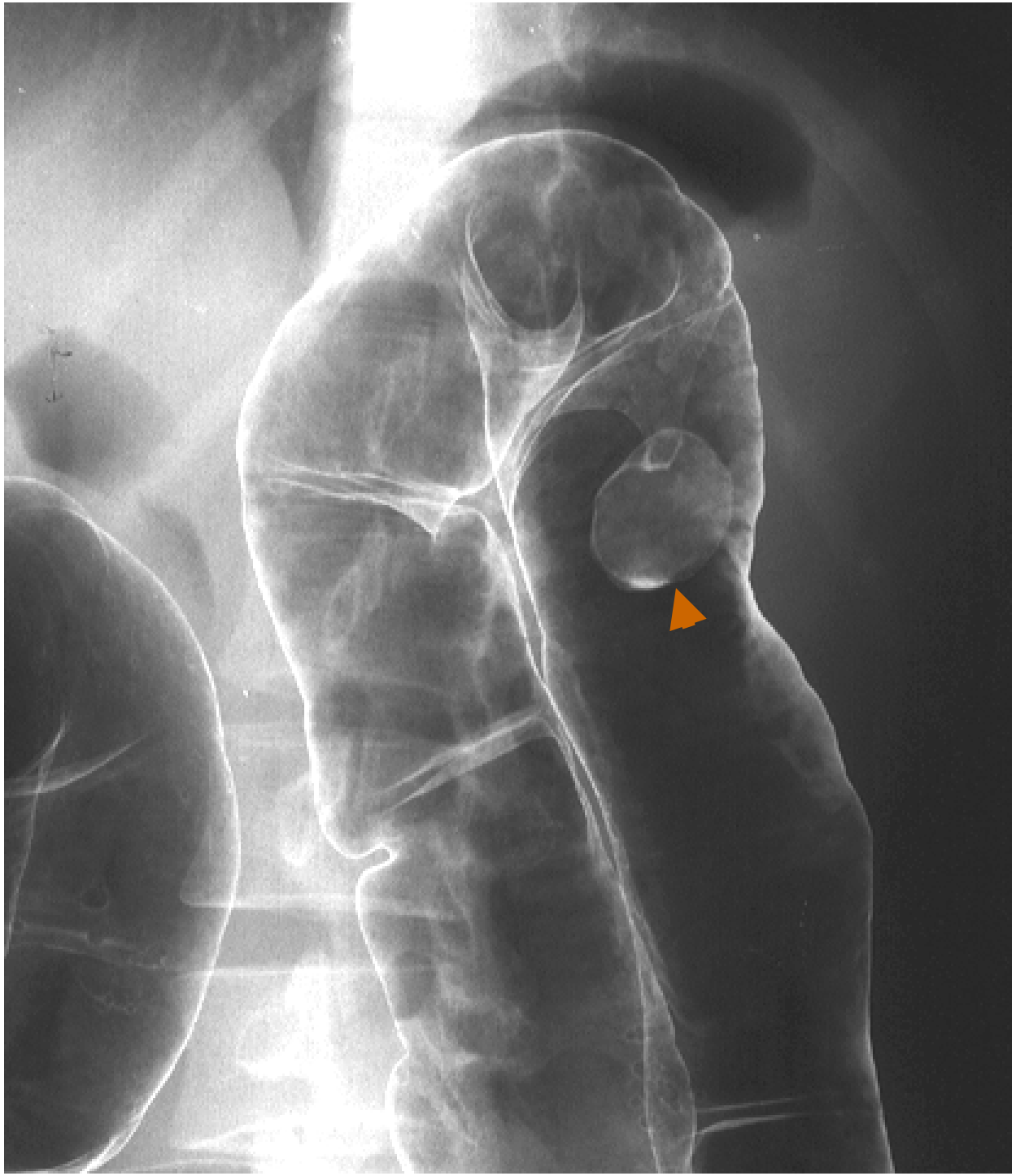
# Colonic Polyp

Round filling defect

Clear margin

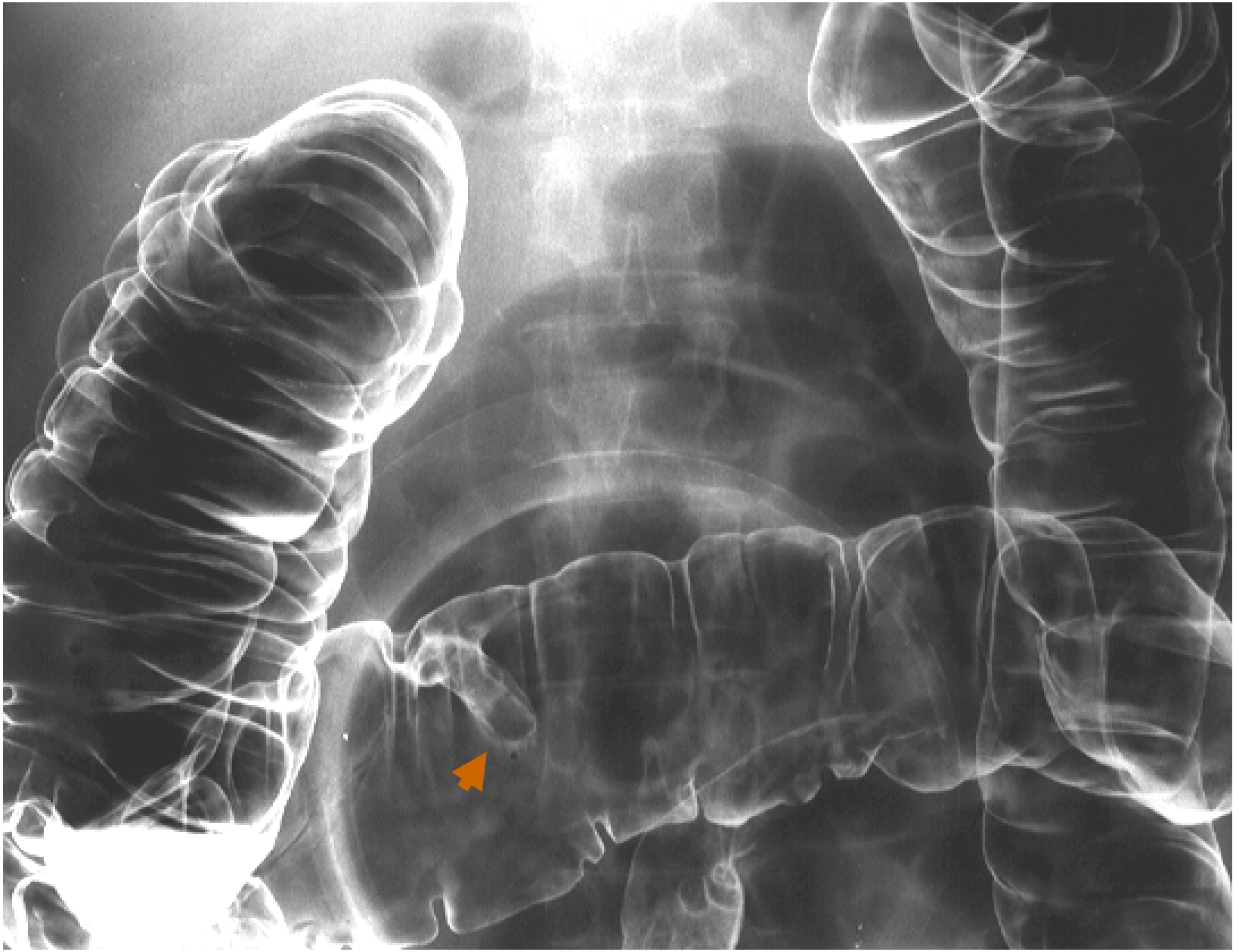
Slightly movable

<5mm



double contrast

结肠息肉：
降结肠近段管腔内示一类园形肿物影，形态较规则，表面光滑。



结肠息肉：横结肠近侧上壁示一长形软组织肿物影。

cobblestone
Multiple
polyposis

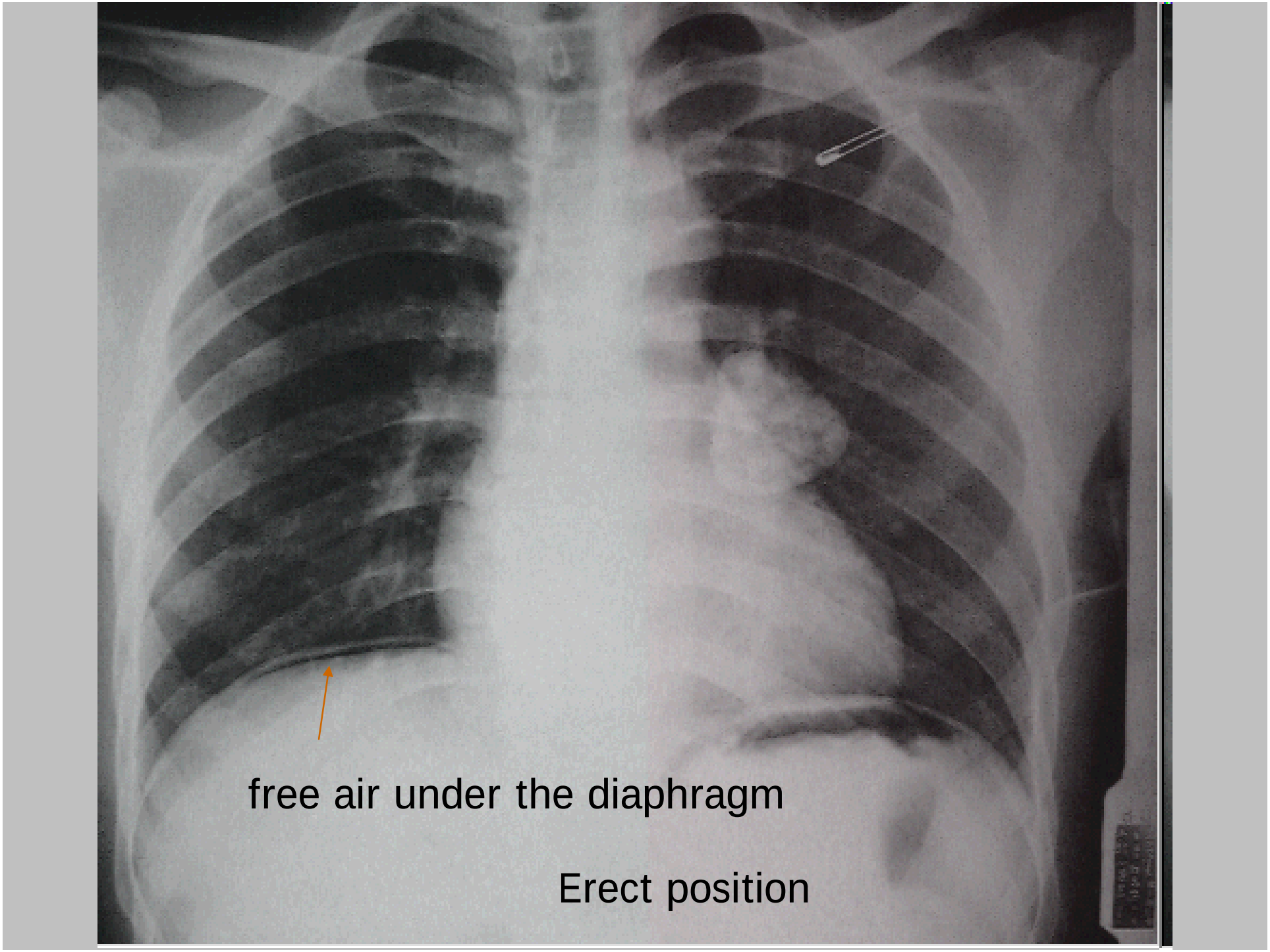
# Acute abdomen

- Gastrointestinal perforation
- Intestinal obstruction
- Intussuception
- Sigmoid Volvulus

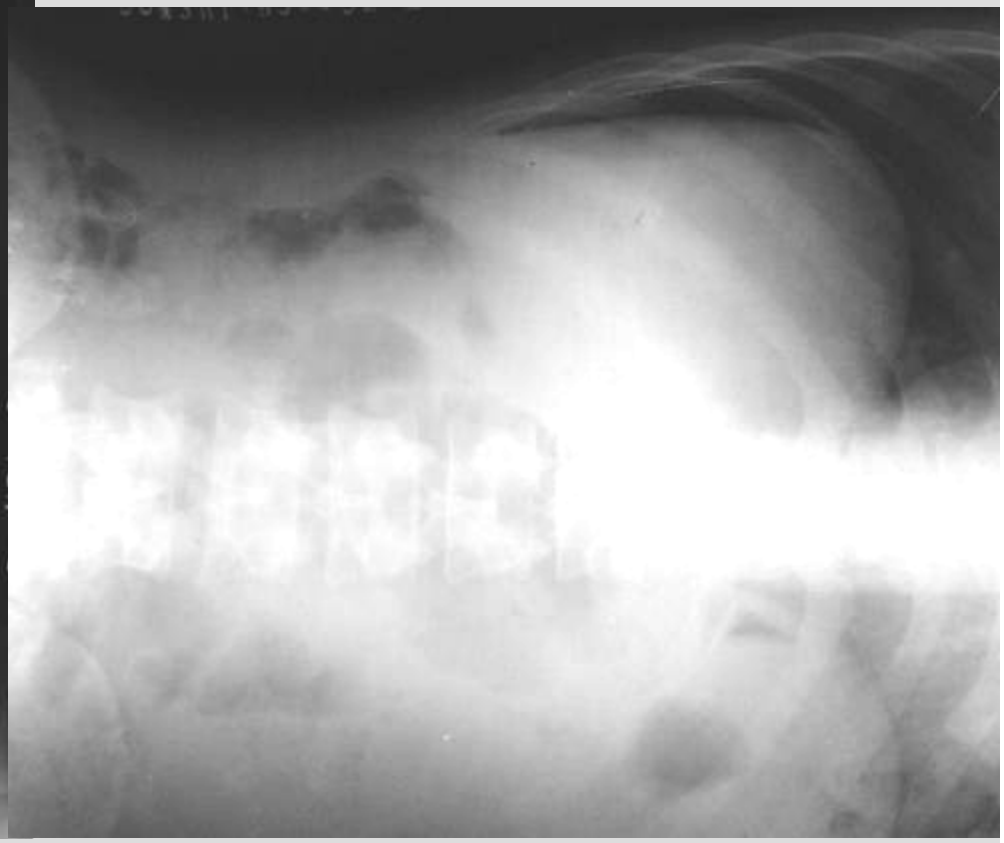
# Acute abdomen

- Gastrointestinal perforation

Presence of free air in the peritoneal cavity
pneumoperitoneum

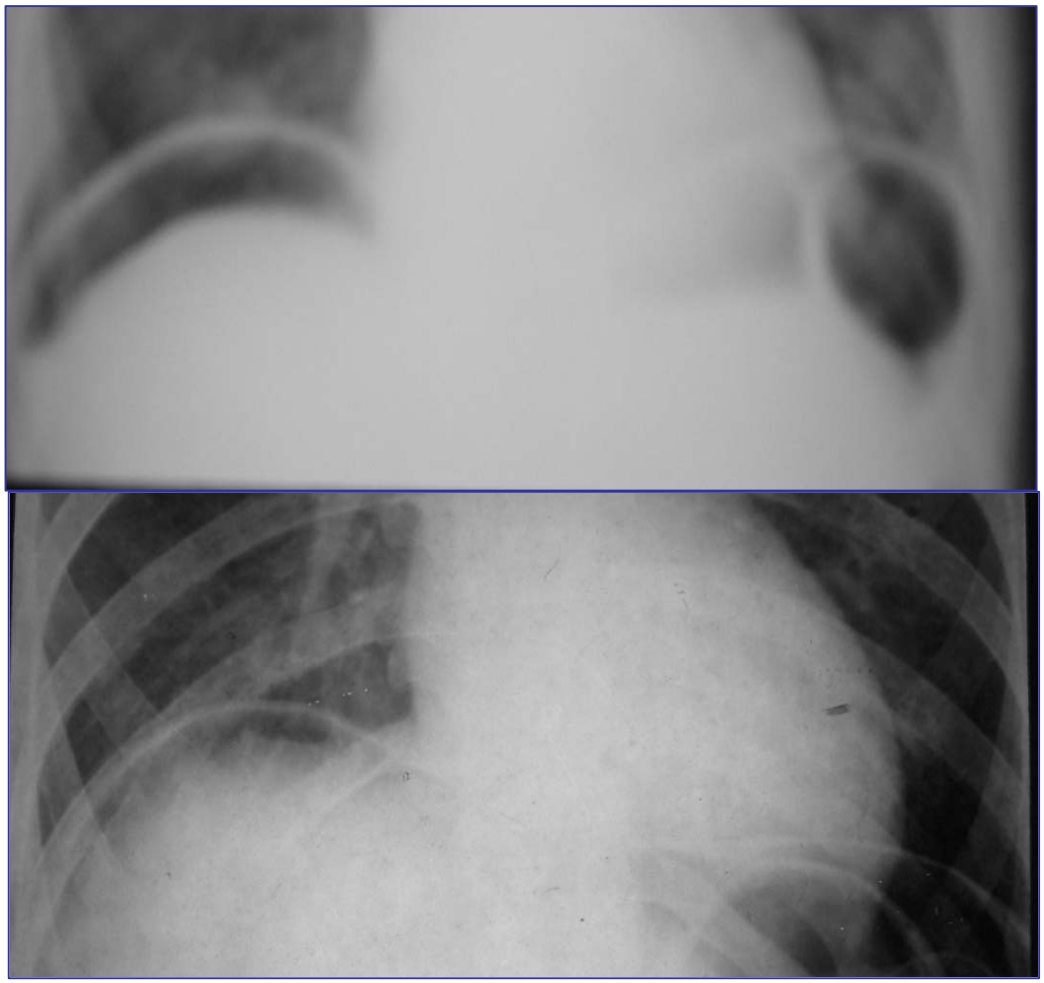

free air under the diaphragm
Erect position

Erect position



Lateral decubitus

# gastrointestinal perforation



# Free gas

# Intussusception

- Telescoping of a segment of bowel (the intussusceptum) into another, usually more distal, segment of bowel (the intussuscipiens)

# Intussusception

**Clinical Findings**

- Children<2-year-old
  - Cyclical, colicky abdominal pain
  - Vomiting
  - "Currant jelly" stools (diarrhea with mucus and blood) or other blood in stool
    - Classic triad occurs in about 1/3 of patients; most have 2 of the 3
  - Palpable abdominal mass, often in right upper quadrant

# Intussusception

- Plain radiographs are not sensitive or specific
  - Soft tissue mass surrounded by a crescent of gas
  - Evidence of distal small bowel obstruction
  - Absence of or decreased gas in the colon
  - Pneumoperitoneum
  - May be normal

# Intussusception

Barium (gas)enema (diagnostic and therapeutic)

- “Coiled spring” appearance

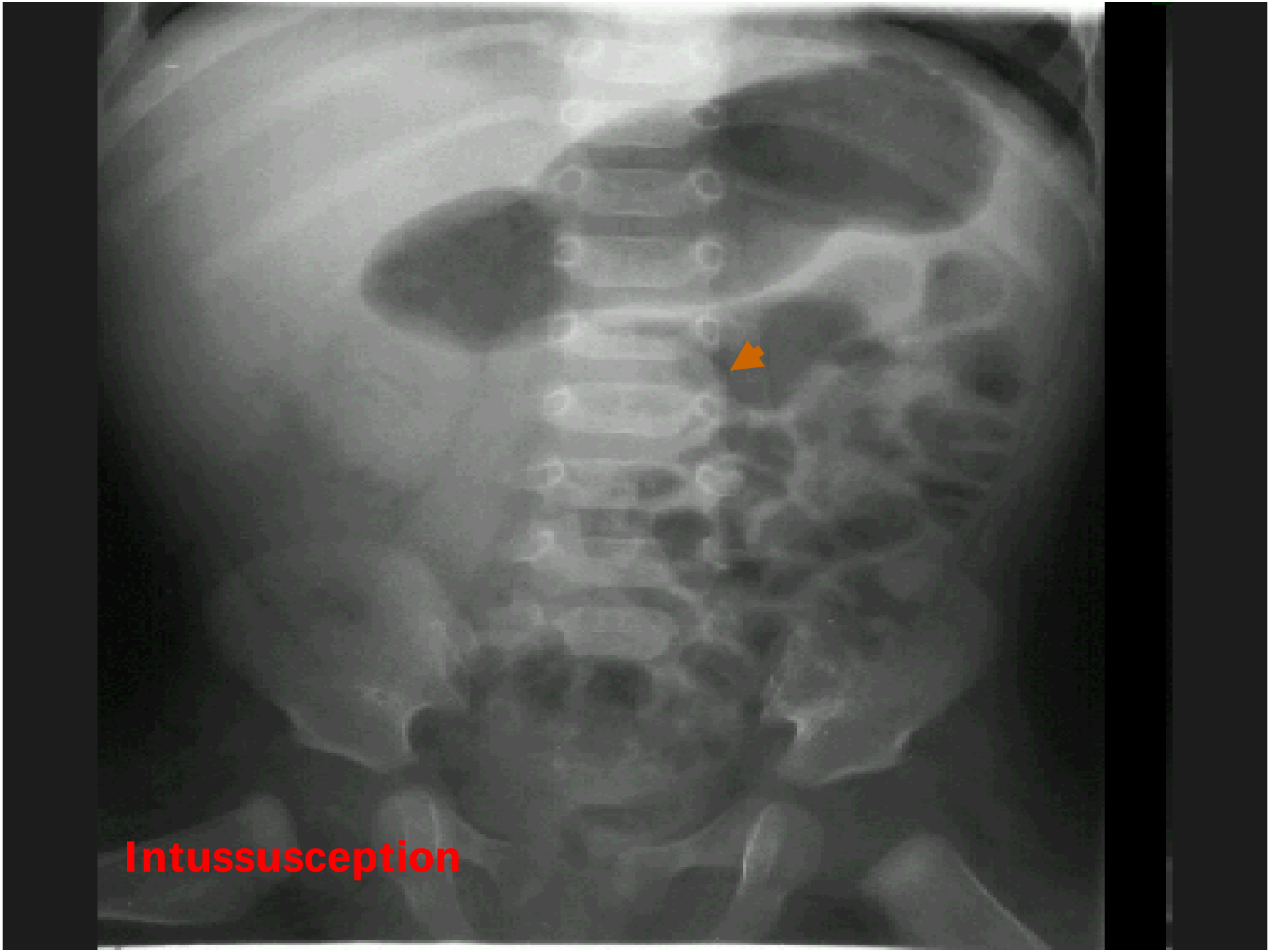
o Barium in lumen of the intussusceptum and in the intraluminal space

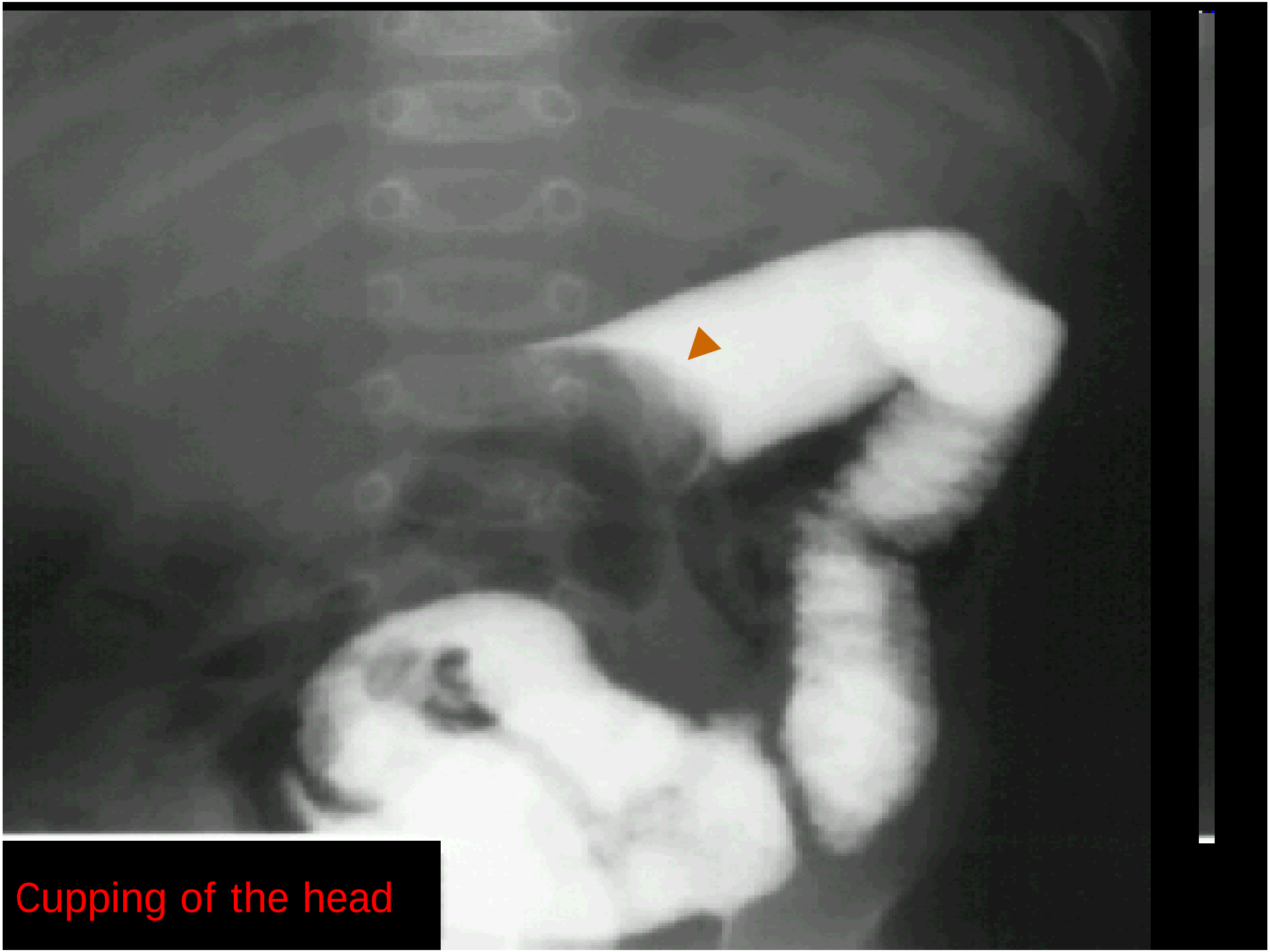
Between the intussusceptum and the intussuscipiens

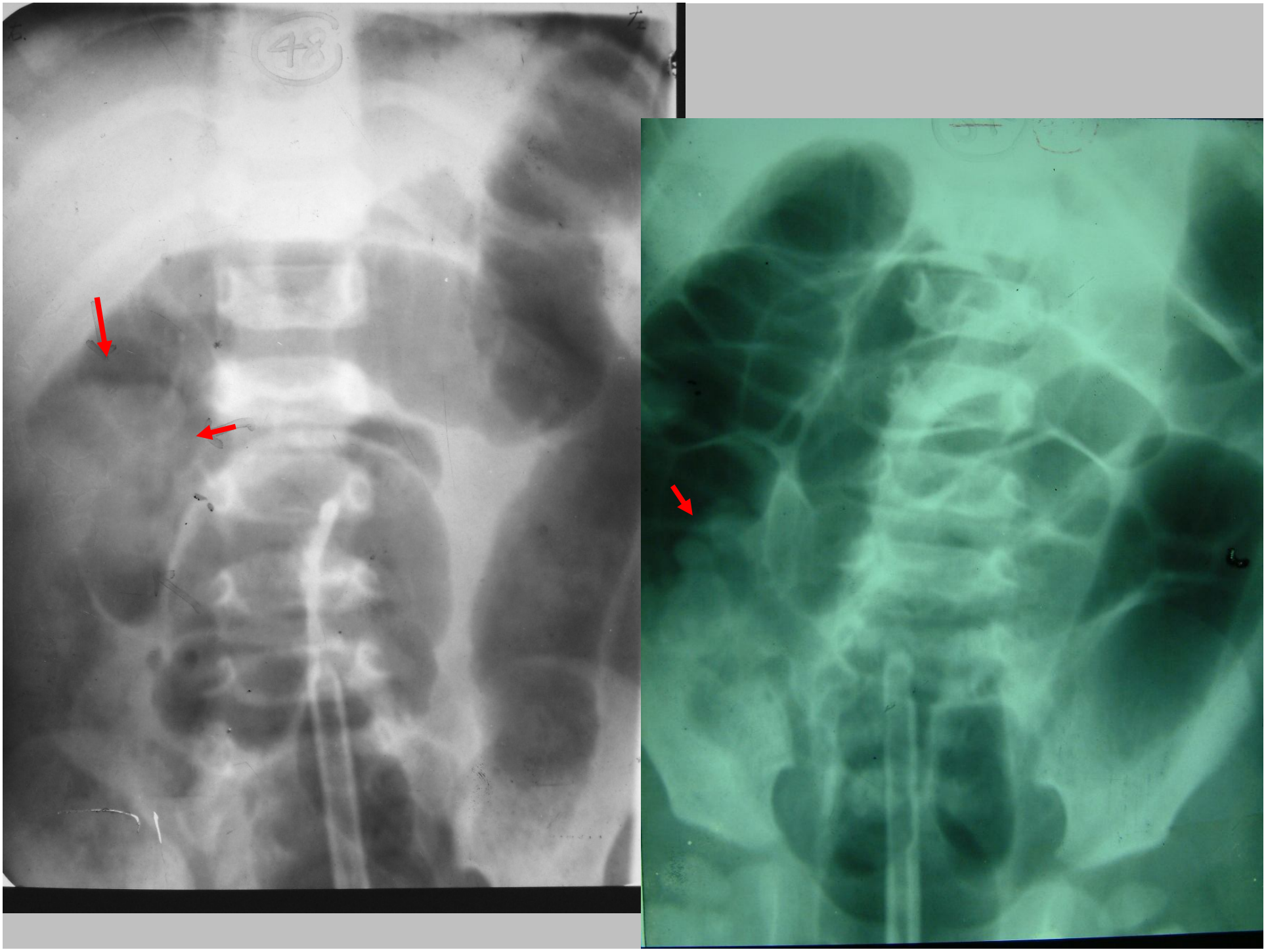
# 肠套叠

- 多见2岁以下小儿，阵发性哭闹，果酱样大便。
- X线：
  - 低位小肠梗阻
  - 空气灌肠：24h内
  - 复位成功标志：杯口影或肿块影消失，气体进入近段肠腔，症状消失，患儿安静入睡

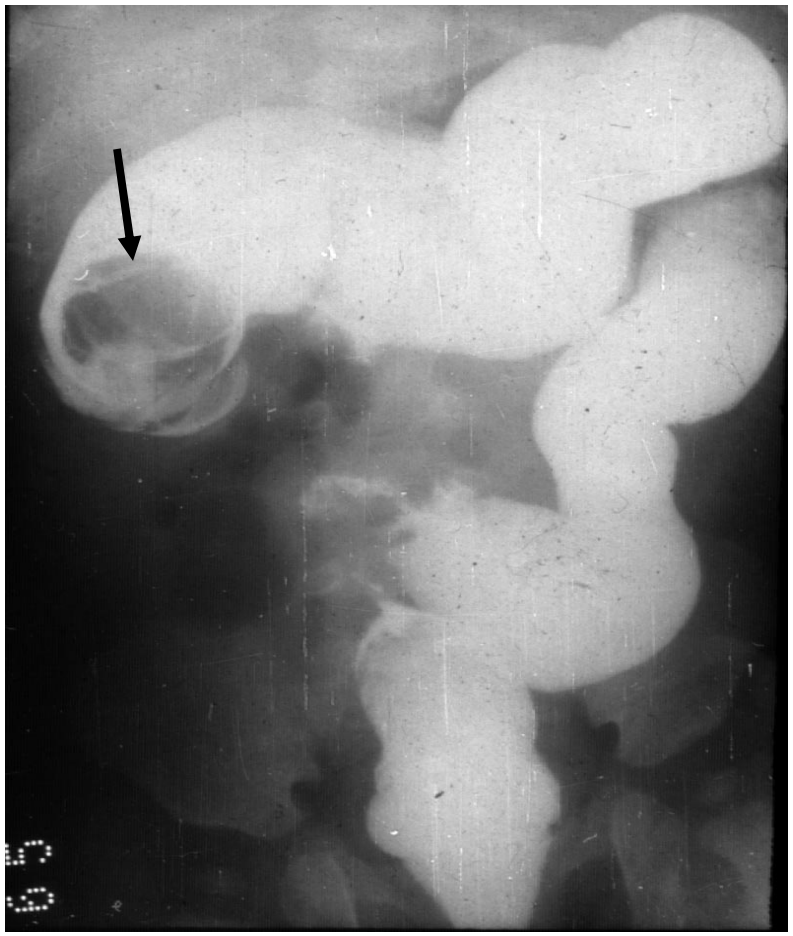
# “Coiled spring” appearance

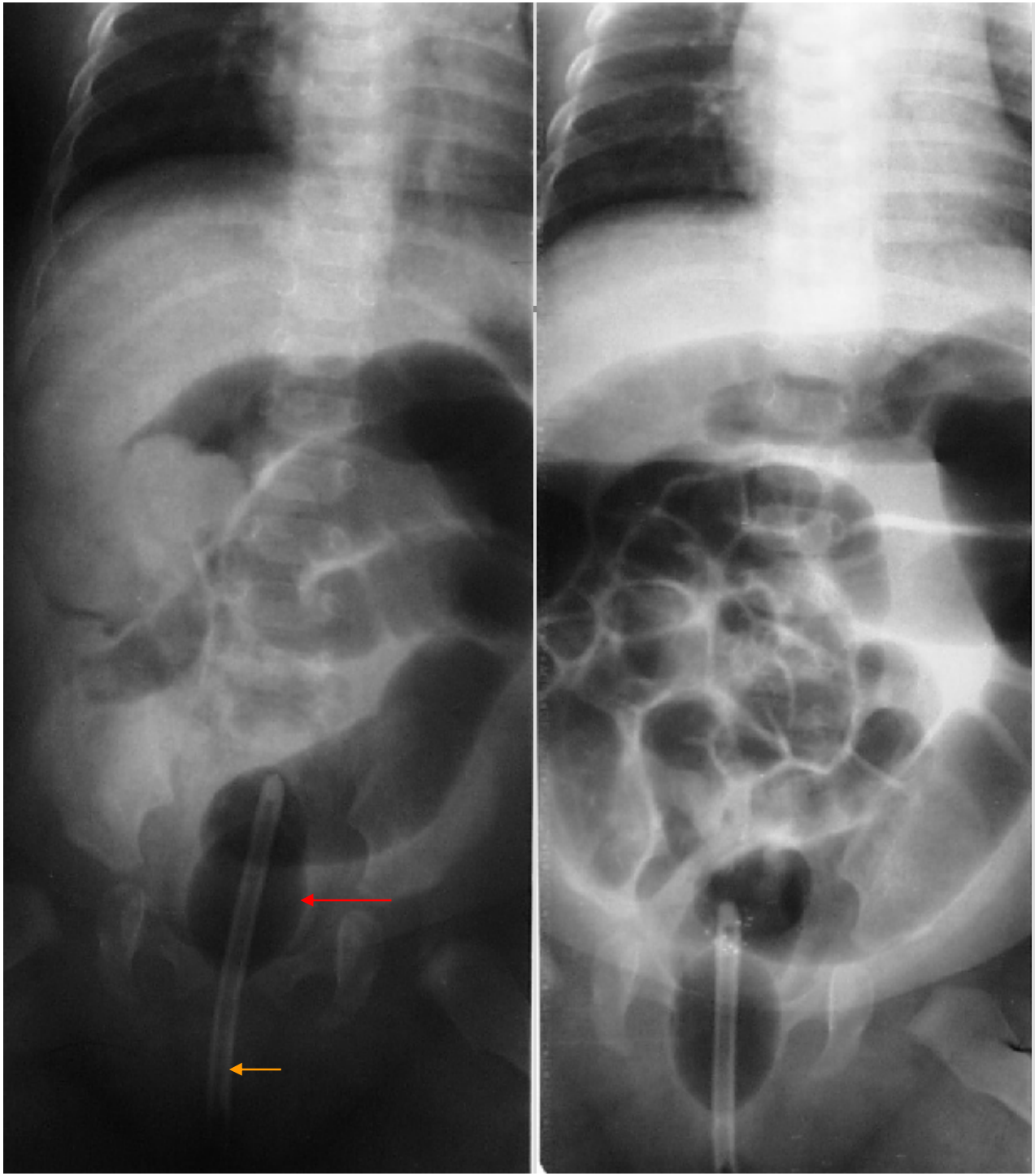

Intussusception


Cupping of the head



# 急腹症---肠套叠





# Gas enema

（↑）为导管
（↑）为气囊

# Intestinal obstruction

It is a mechanical or functional obstruction of the intestines, preventing the normal transit of the products of digestion.

# Mechanical SBO

## Causes

- Adhesions
- Hernia*
- Volvulus
- Gallstone ileus*
- Intussusception

*Cause may be visible on plain film

# Mechanical LBO

## Causes

- Tumor
- Volvulus
- Hernia
- Diverticulitis
- Intussusception

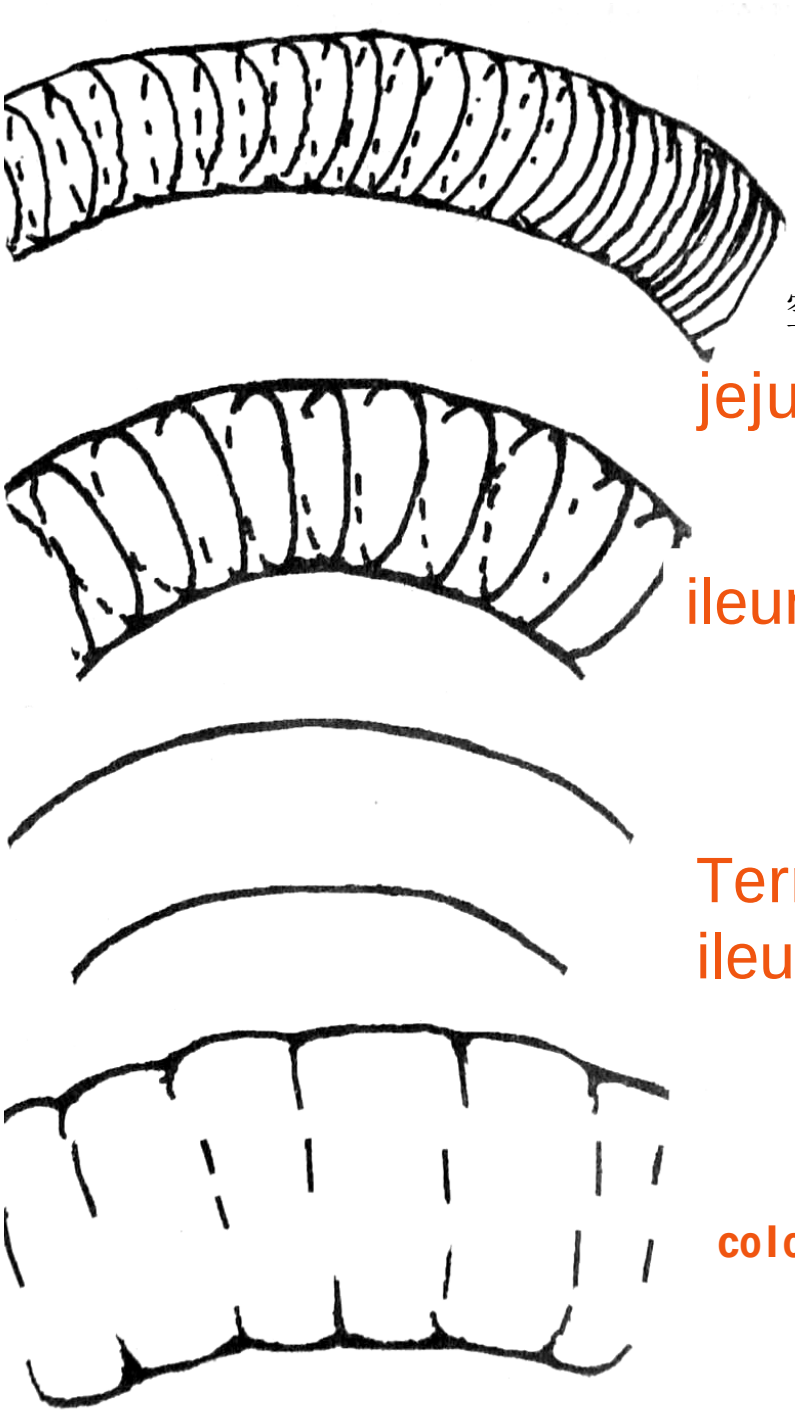
# Intestinal obstruction

- Simple small intestinal obstrution
- Strangulated intestinal obstrution
- Paralytis intestinal obstrution
- Colon obstruction

# Intestinal obstruction

X-ray Features

- Multiple gas distended intestinal loops with fluid levels on erect film




## distended intestinal loops

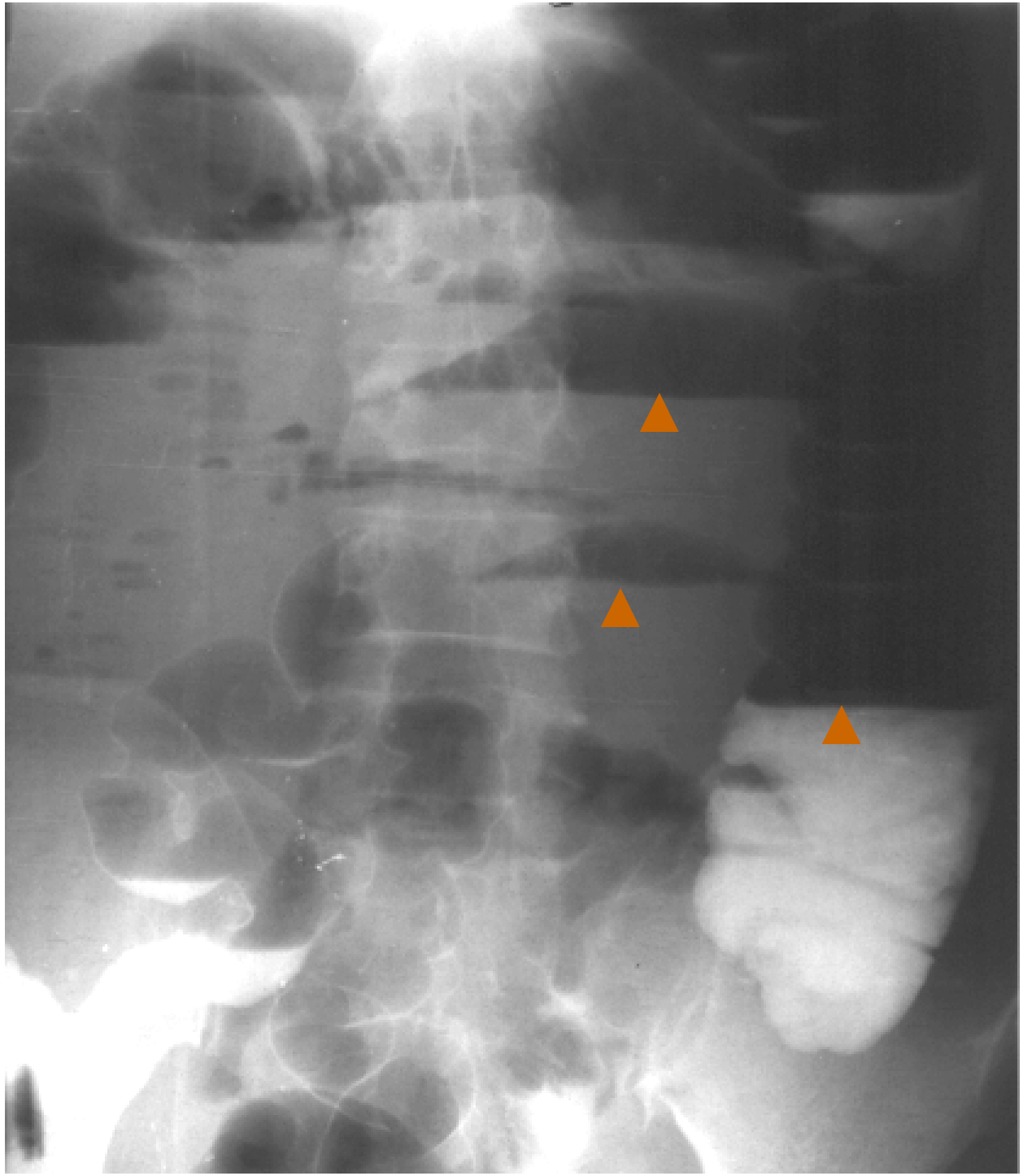
空肠：肠腔内环状皱襞密集

回肠起始段：肠腔内较多环状皱襞

回肠末段：肠腔内不见环状皱襞

结肠：可见结肠袋的间隔

# Stack-of-coins



小肠梗阻：

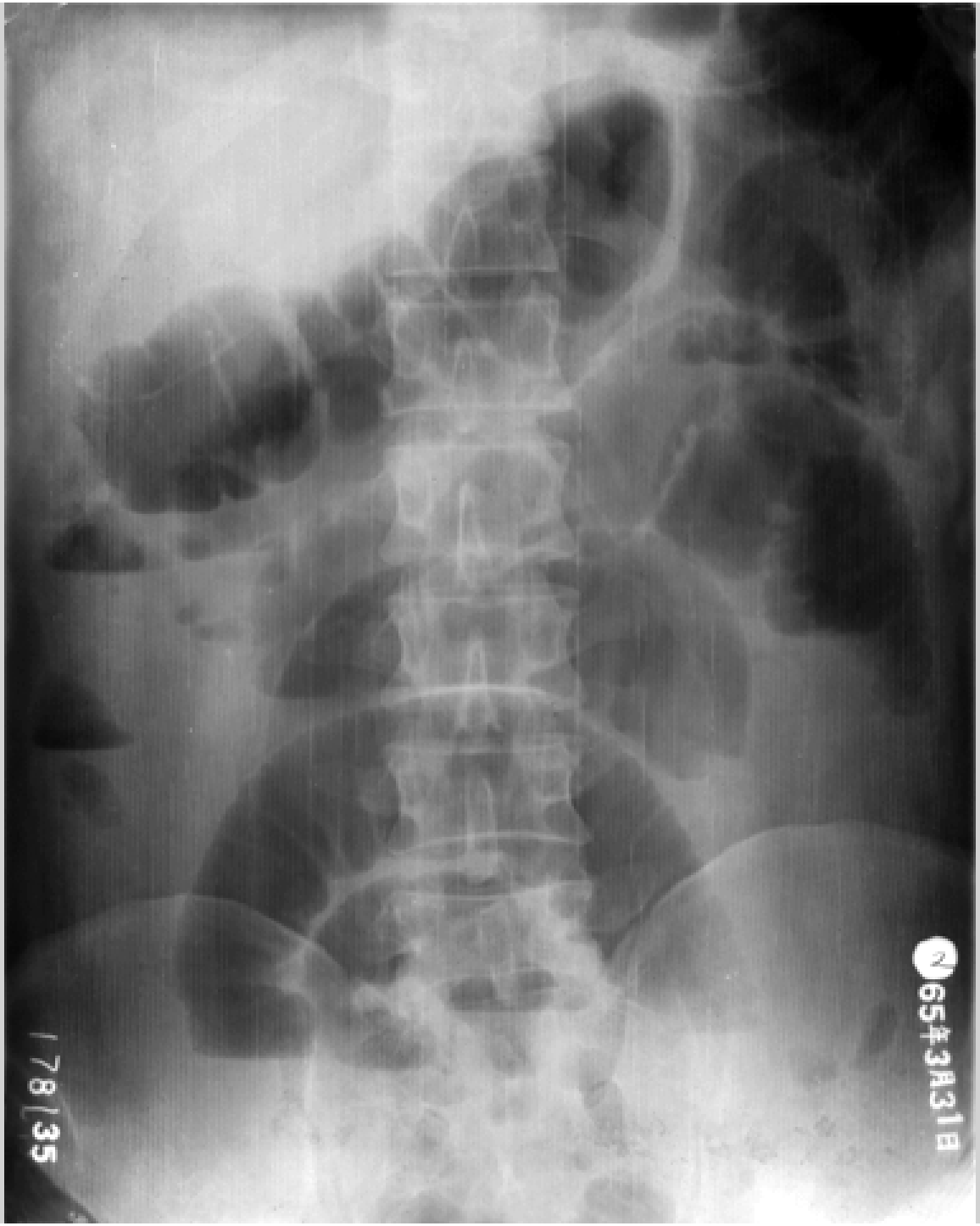
腹腔中部多个气液平面，呈高低不等的阶梯状排列。

“Coiled spring” appearance of the intestinal mucosa

小肠积气扩张：
　　小肠管腔充气扩大，肠粘膜纹呈“弹簧弓”样排列。（其上外部肠管为横结肠和降结肠）。

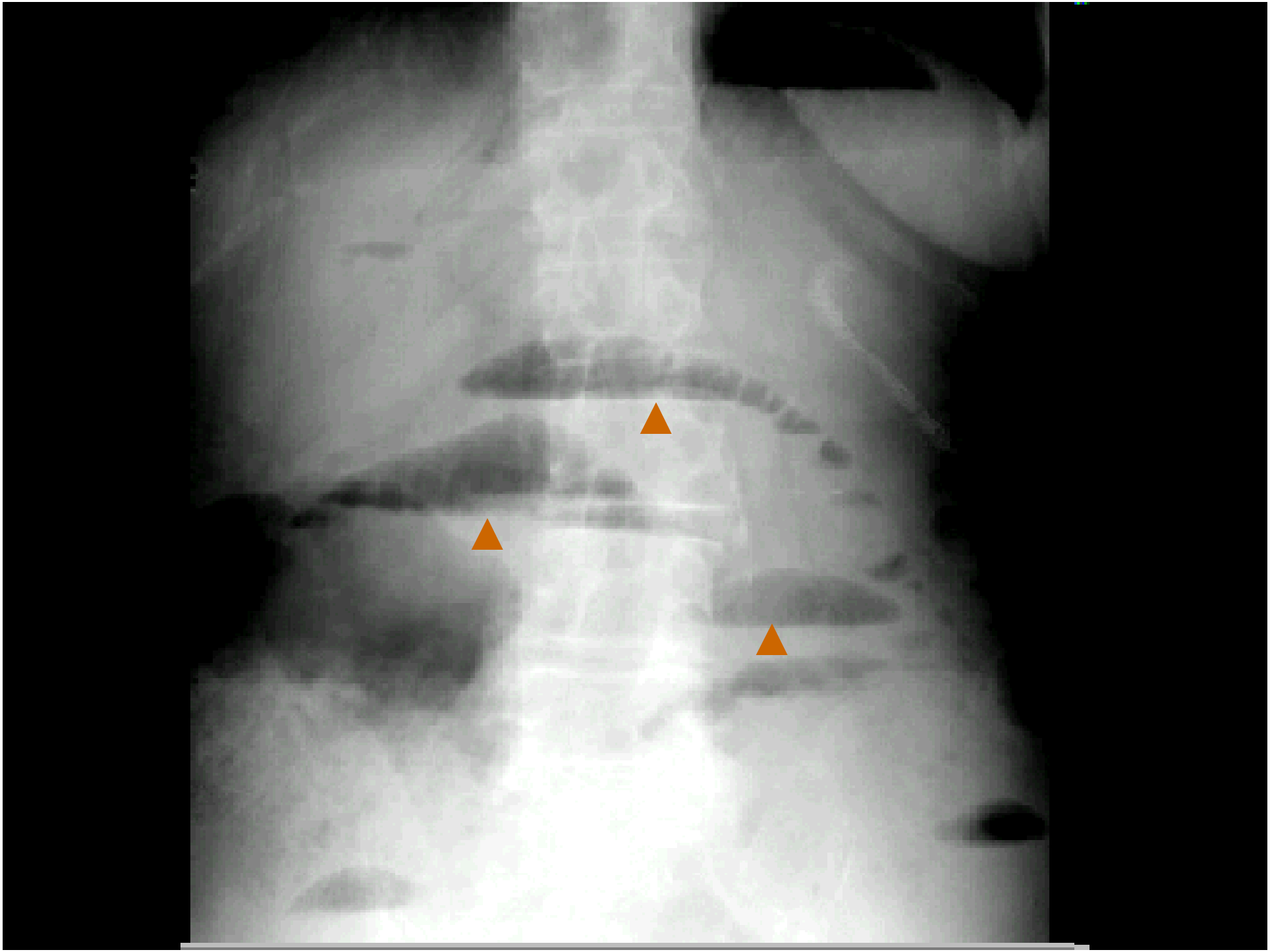
“Coiled spring” appearance of the intestinal mucosa

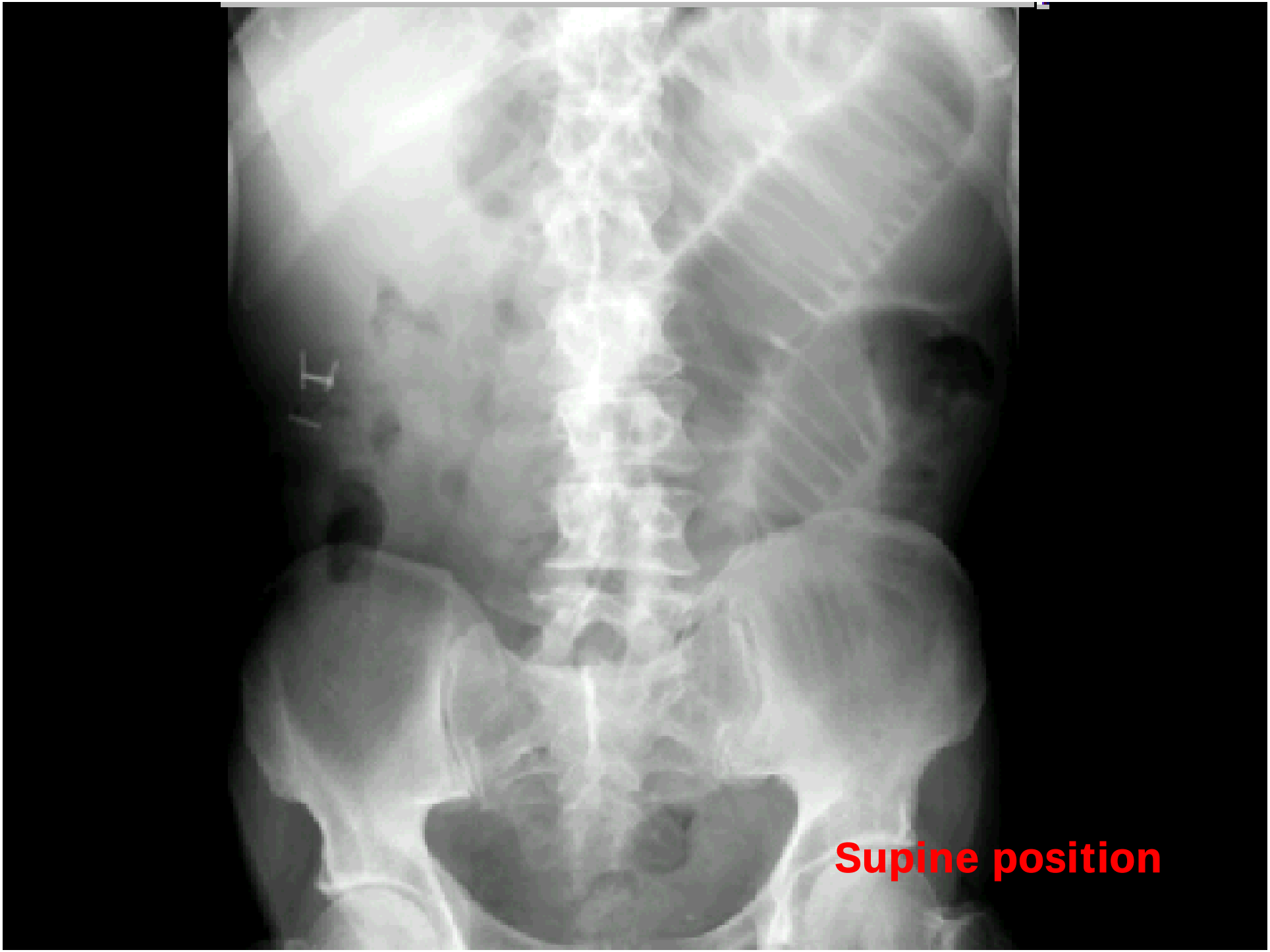
小肠梗阻：
　　腹腔内显示多个弧形充气扩张的肠袢，其内可见小肠粘膜纹呈“弹簧弓”样排列。

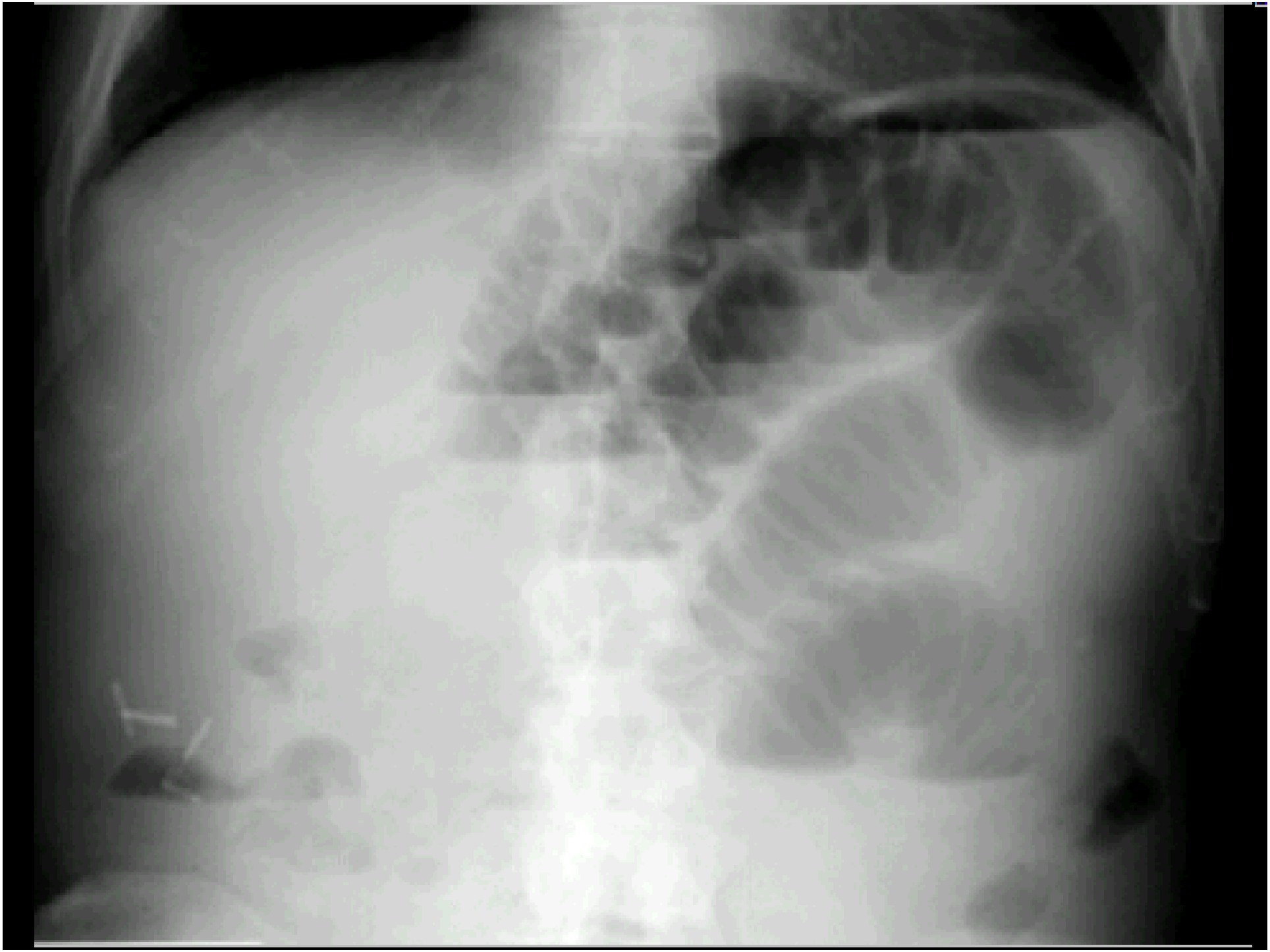


小肠梗阻：

中上腹部显示多数积气积液扩张肠袢，其内可见阶梯样液气平面。

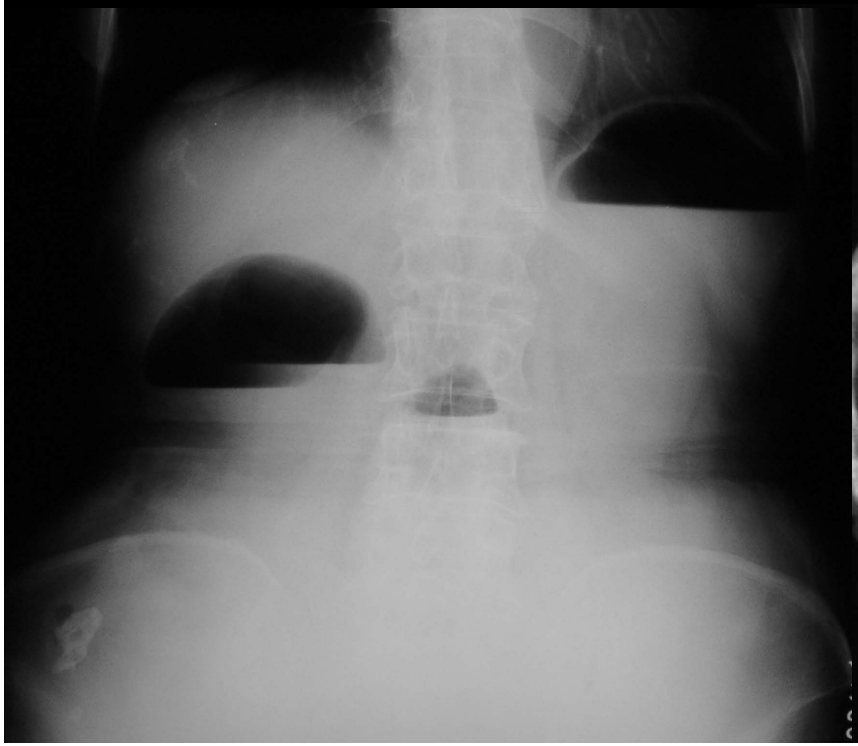


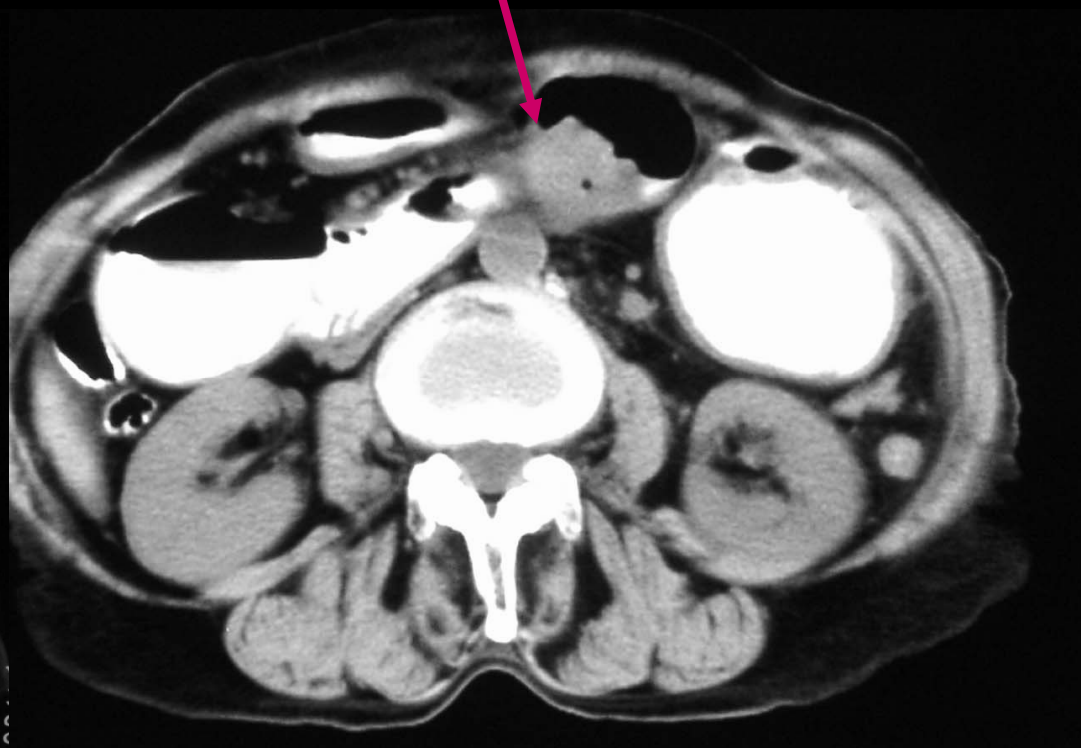

Supine position



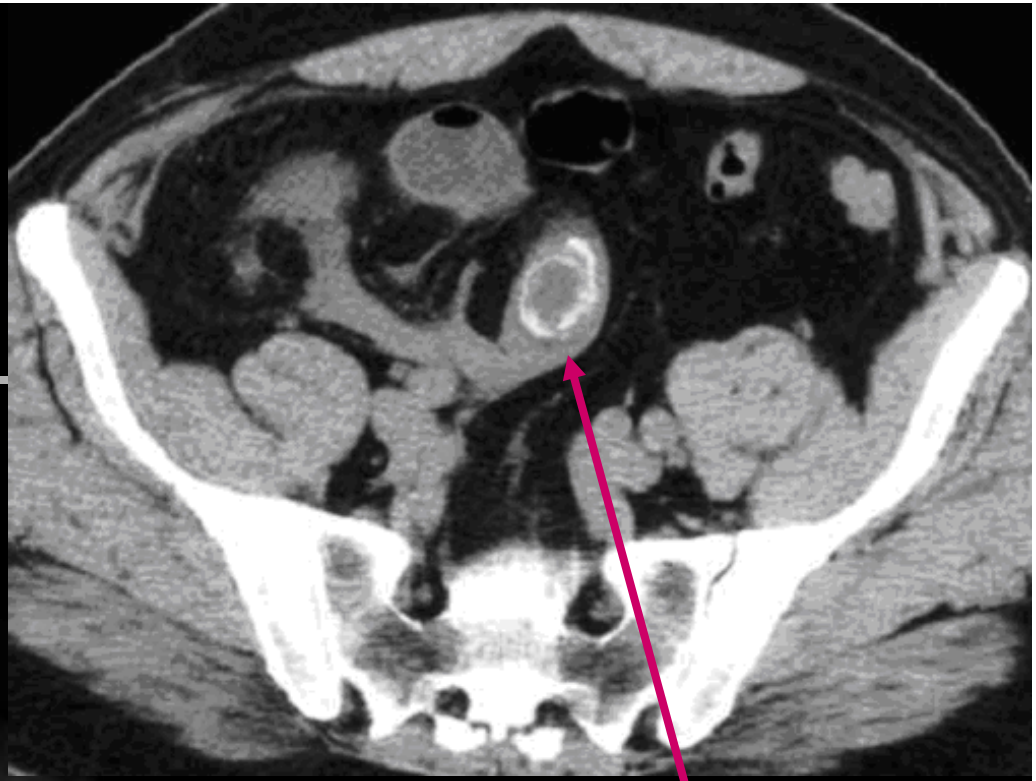
- Simple small intestinal obstrution

Intraluminal mass

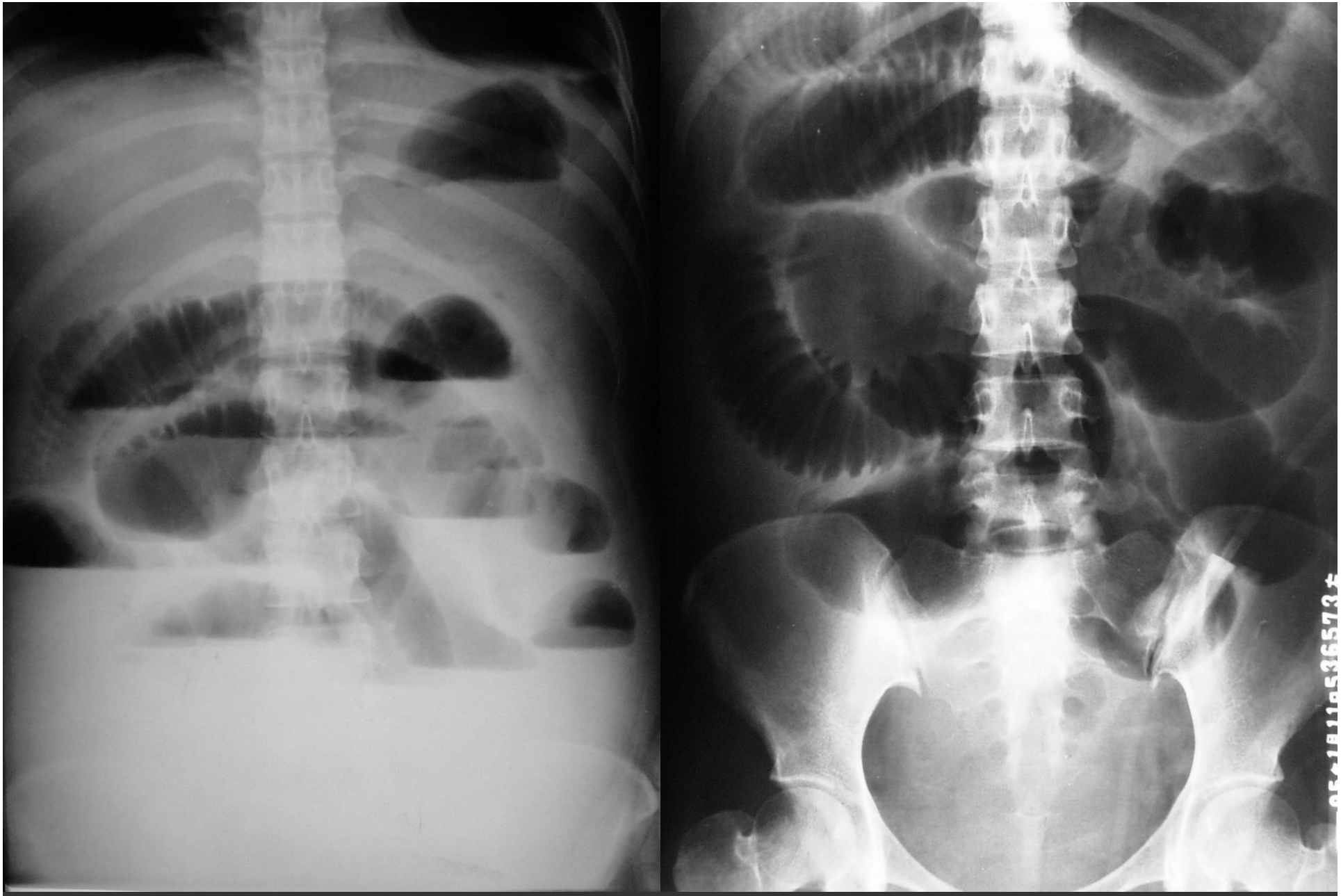




- Simple small intestinal obstrution

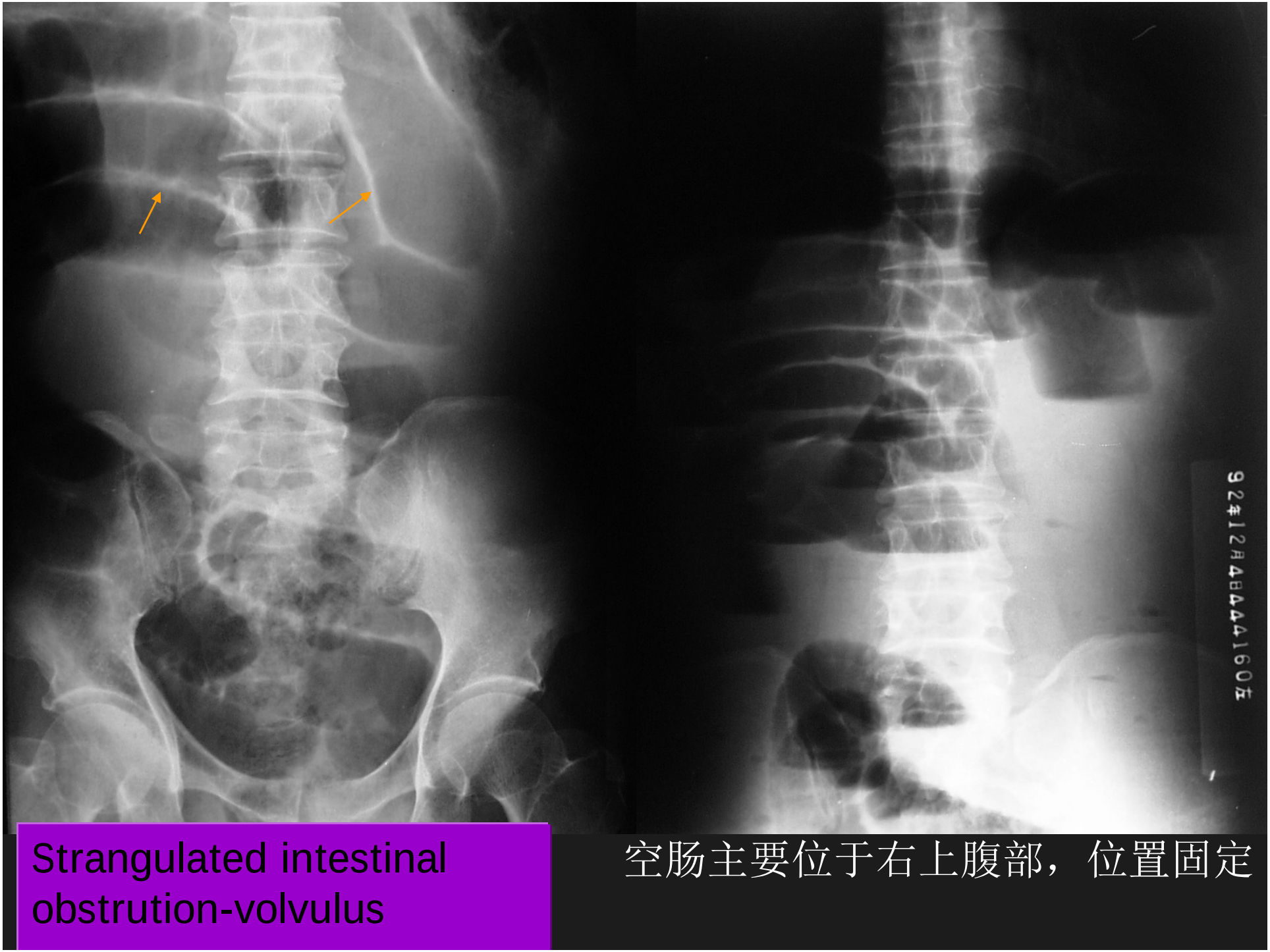


Gallbladder stone falled into the small intestine



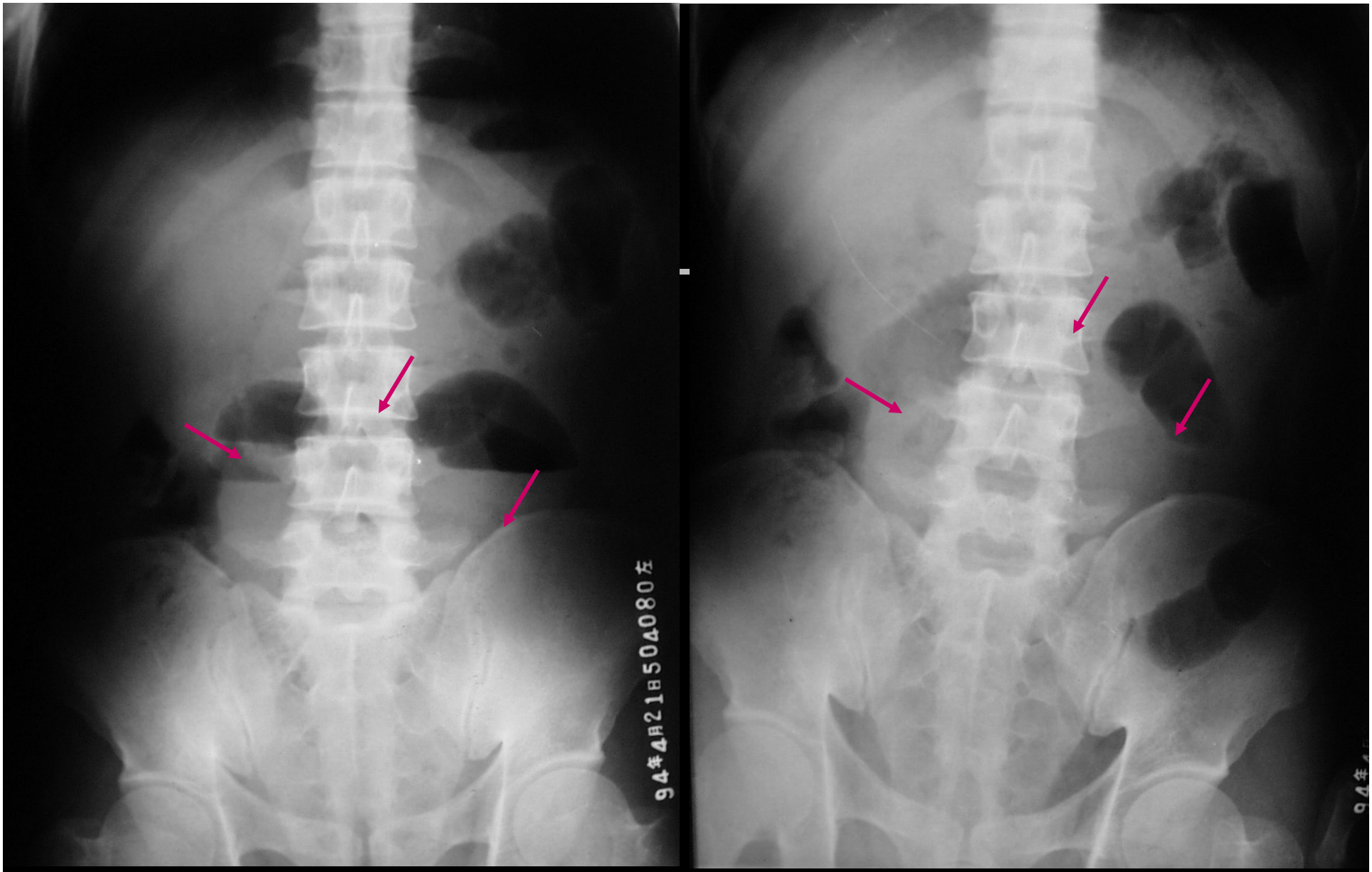
Strangulated intestinal obstrution-volvulus

空肠主要位于右上腹部，位置固定



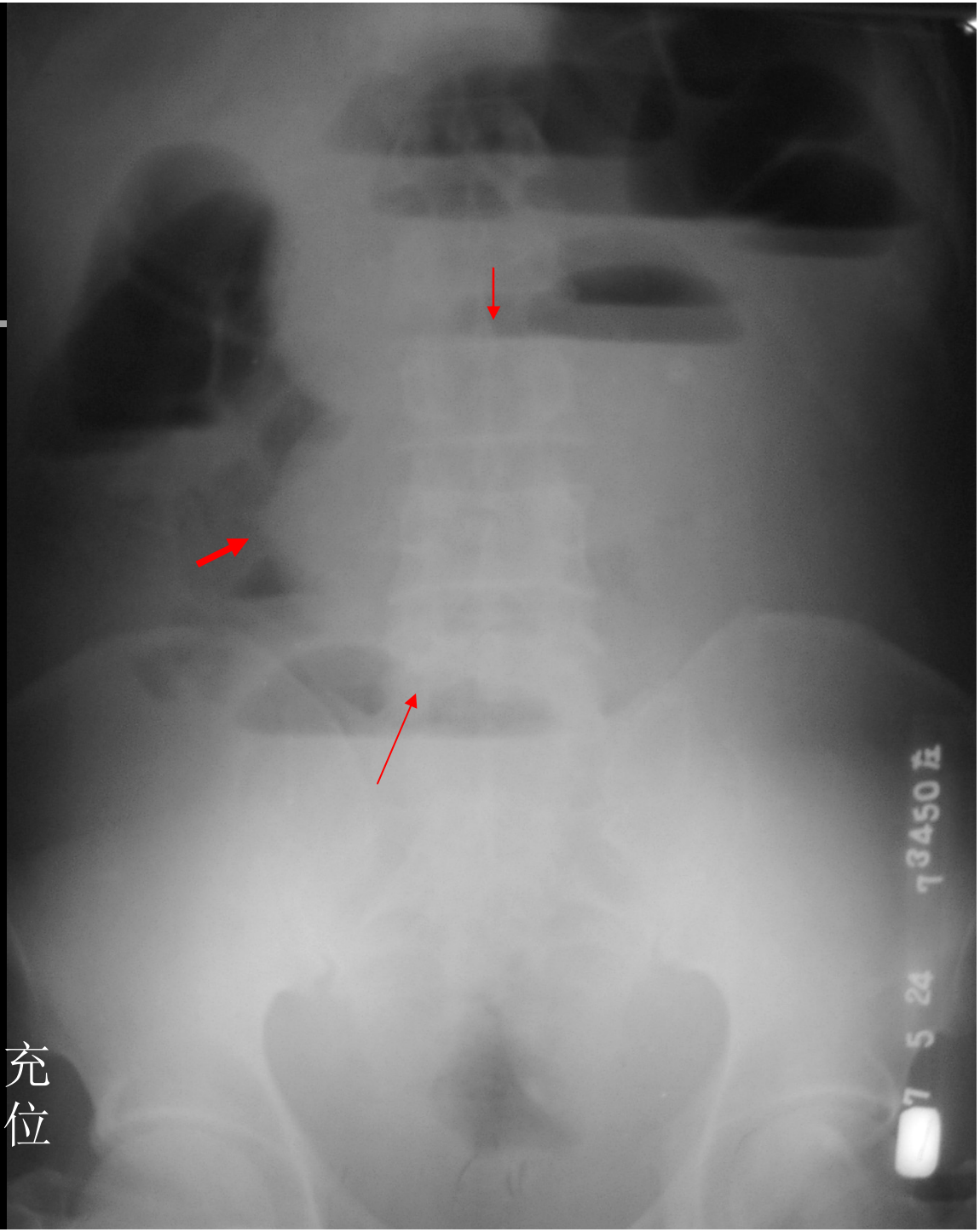

Strangulated intestinal obstrution-volvulus

空肠主要位于右上腹部，位置固定



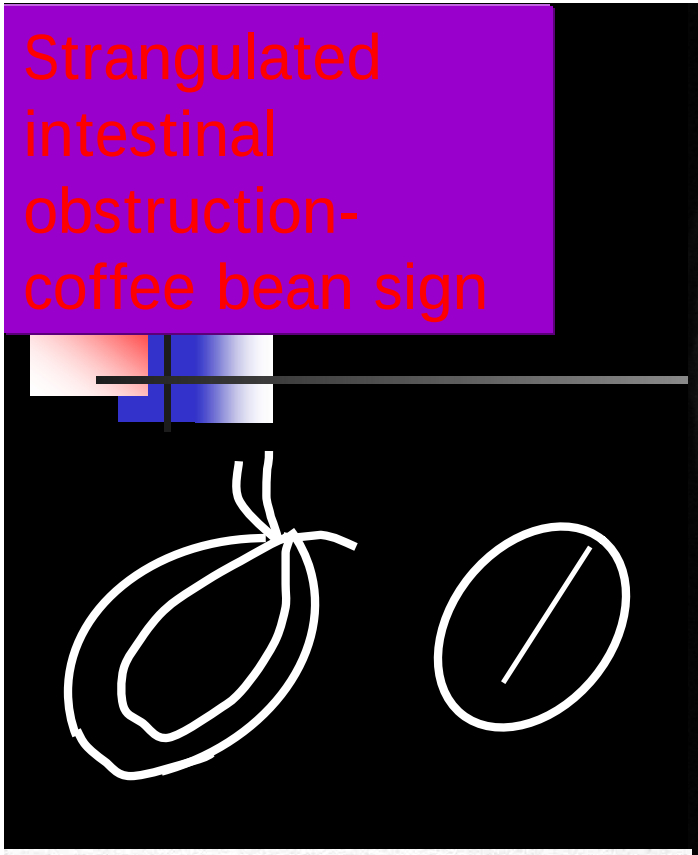
Strangulated intestinal obstruction-pseudotumor sign

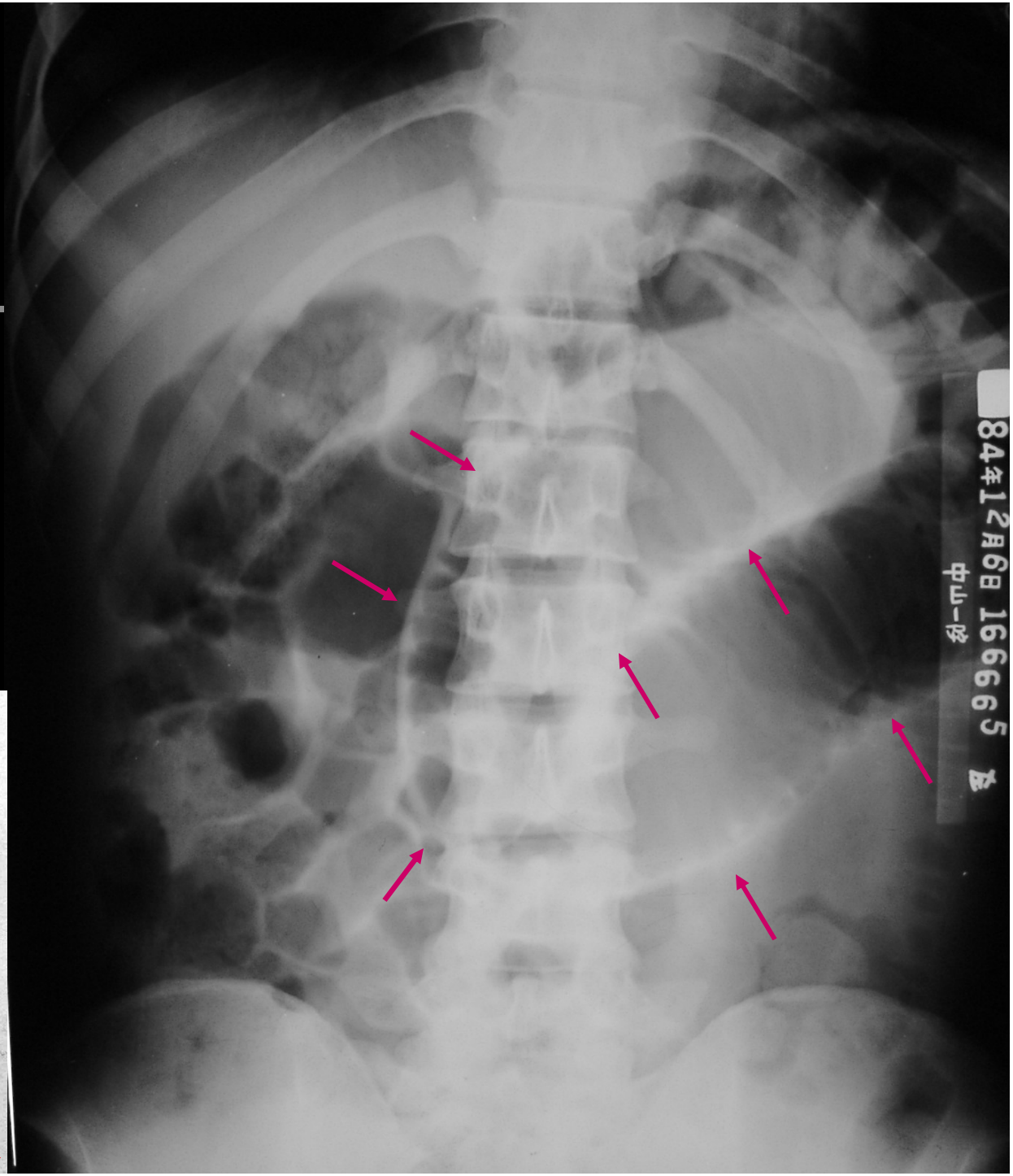
Strangulated intestinal obstruction-pseudotumor sign



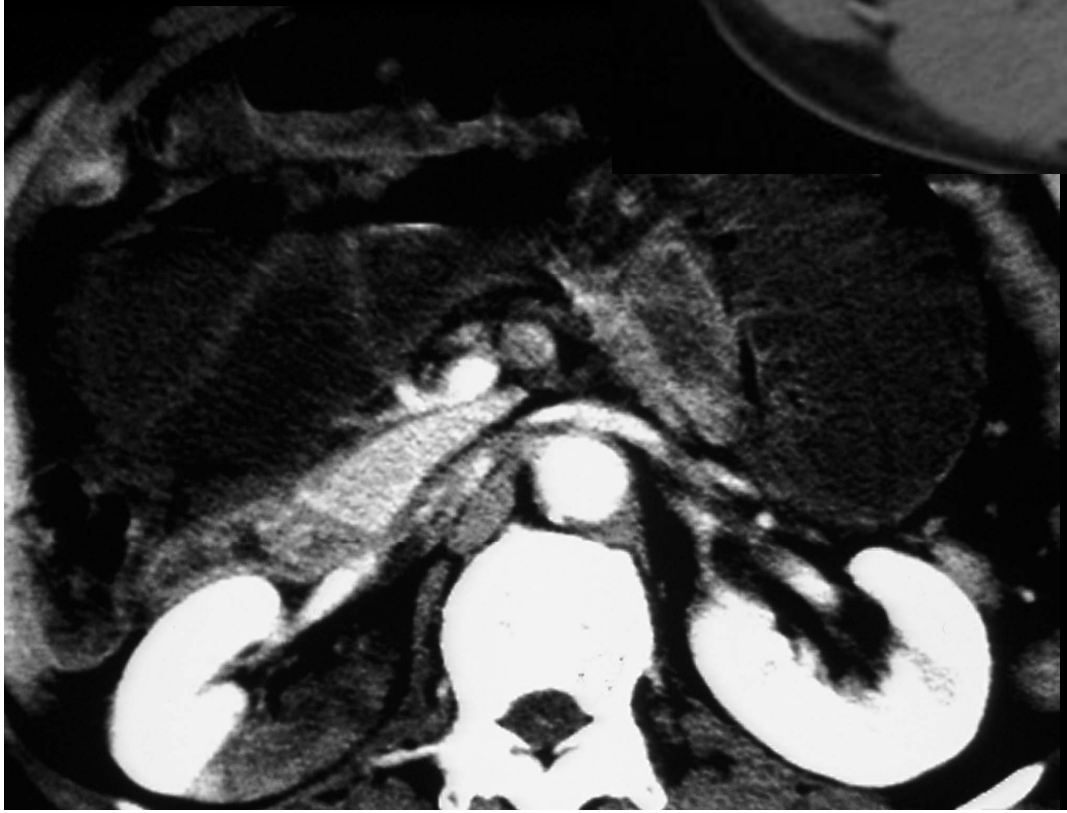
立卧位平片见下腹部无肠气充盈区，位置固定，似肿瘤占位

# Strangulated intestinal obstruction-coffee bean sign





SMA栓塞至血运性肠梗阻；右肾梗塞



volvulus

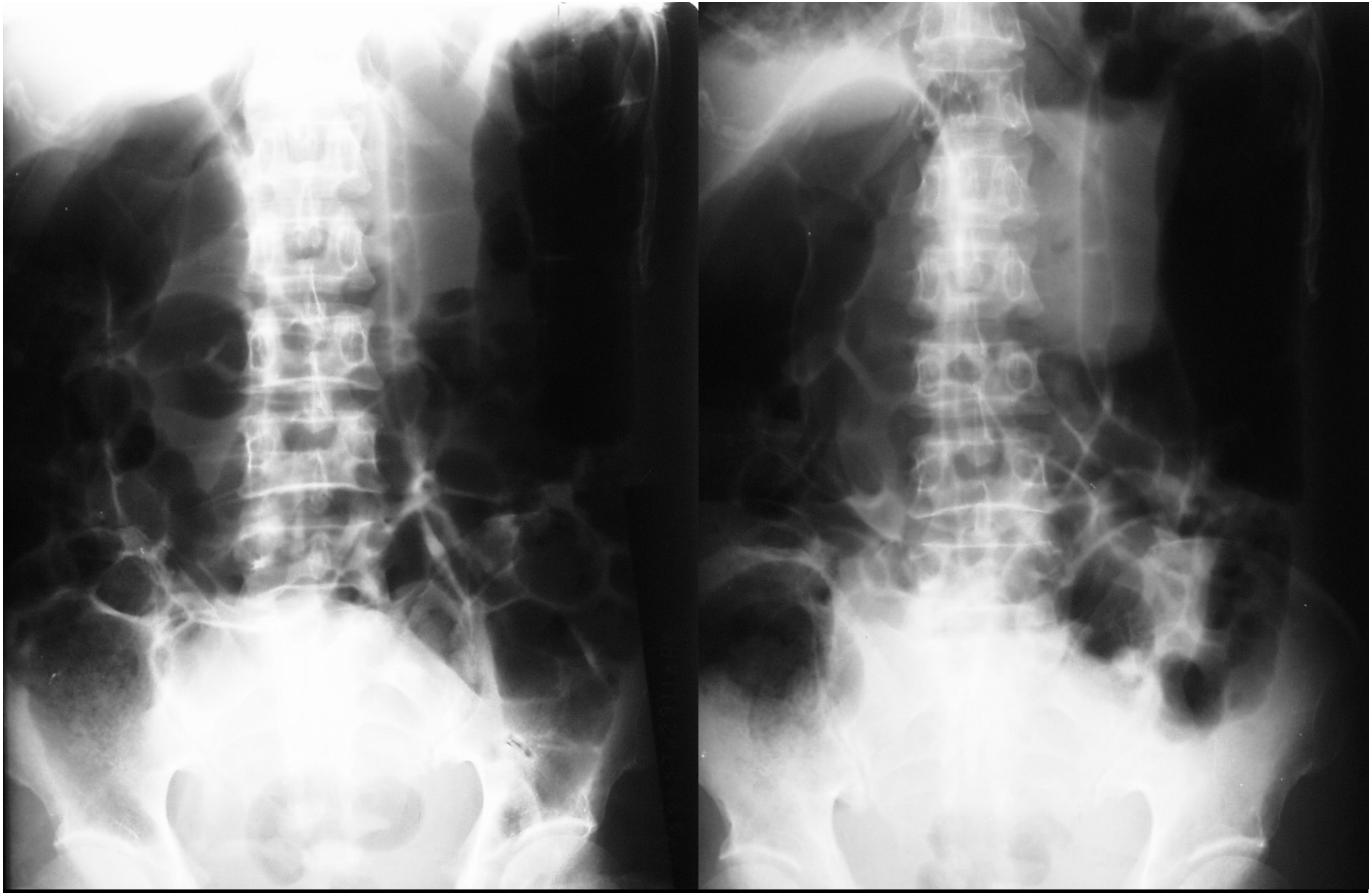
# Paralytis intestinal obstrution

Causes: acute peritonitis, septicopyemia, postoperation, injury, shock……

X-ray findings

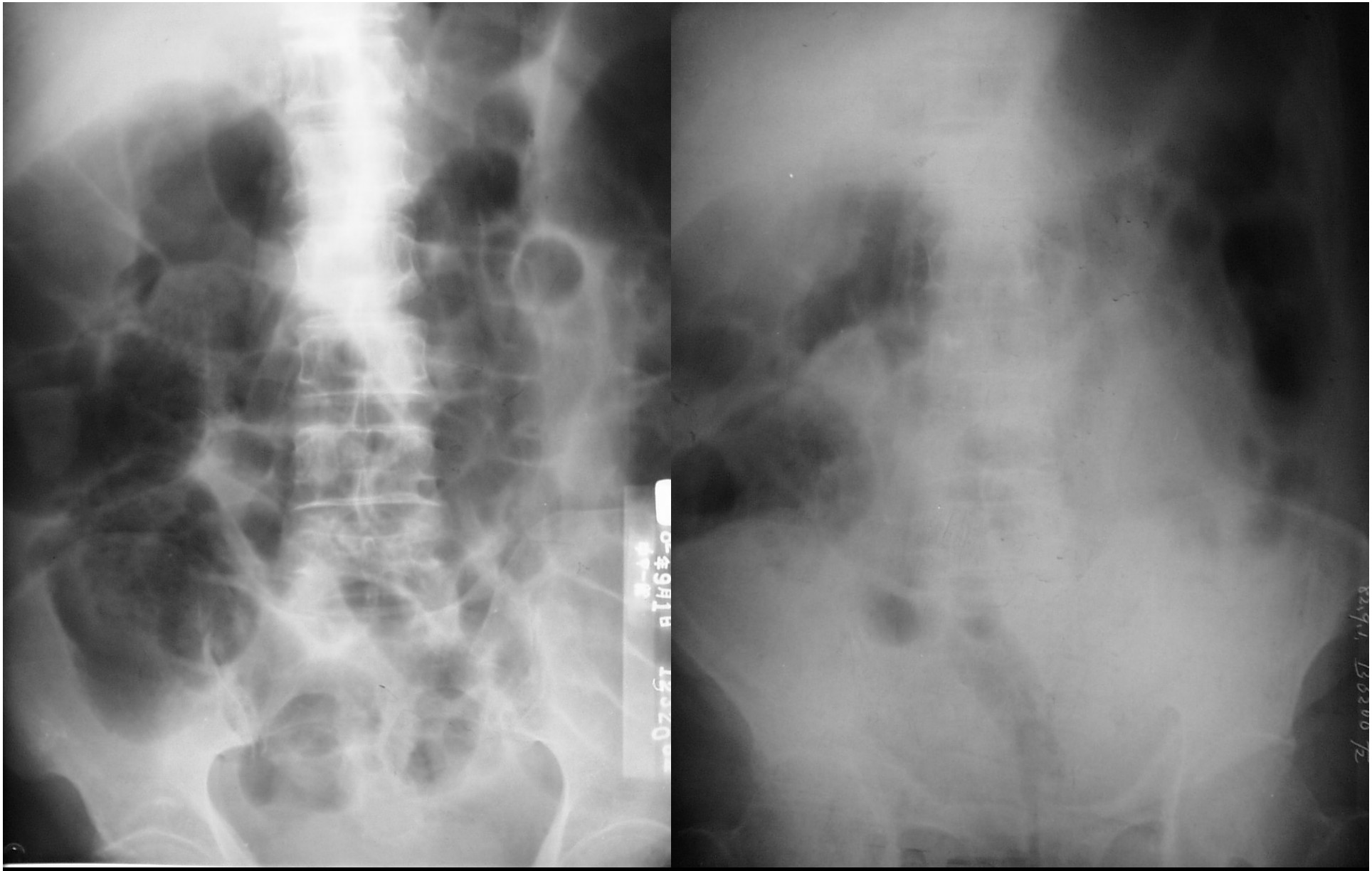
- diffuse bowel dilatation with gas
- Little fluid
- Decreased motility

# Paralytis intestinal obstrution



Paralytis intestinal

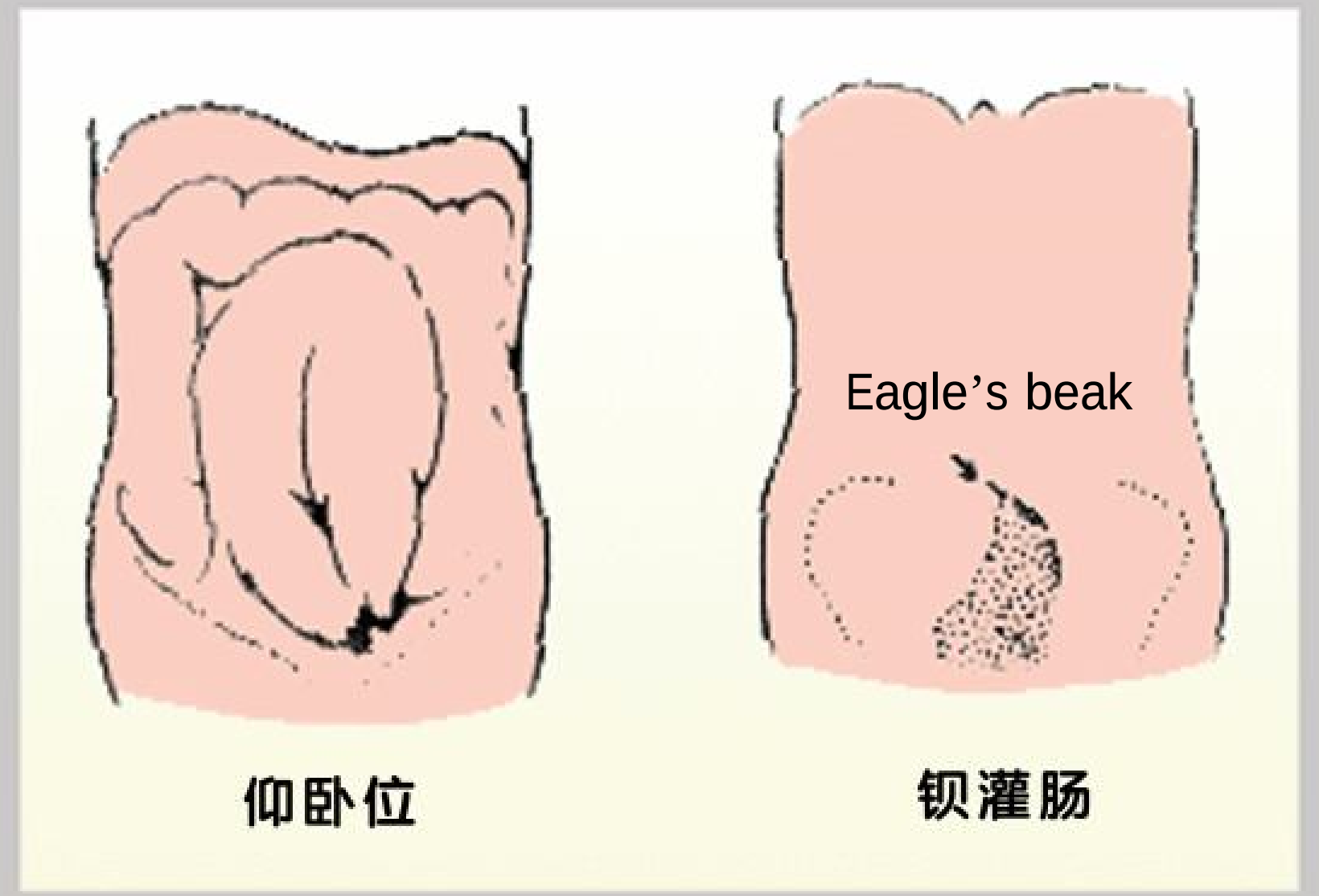
大小肠普遍性胀气呈蜂窝状，未见气液平面



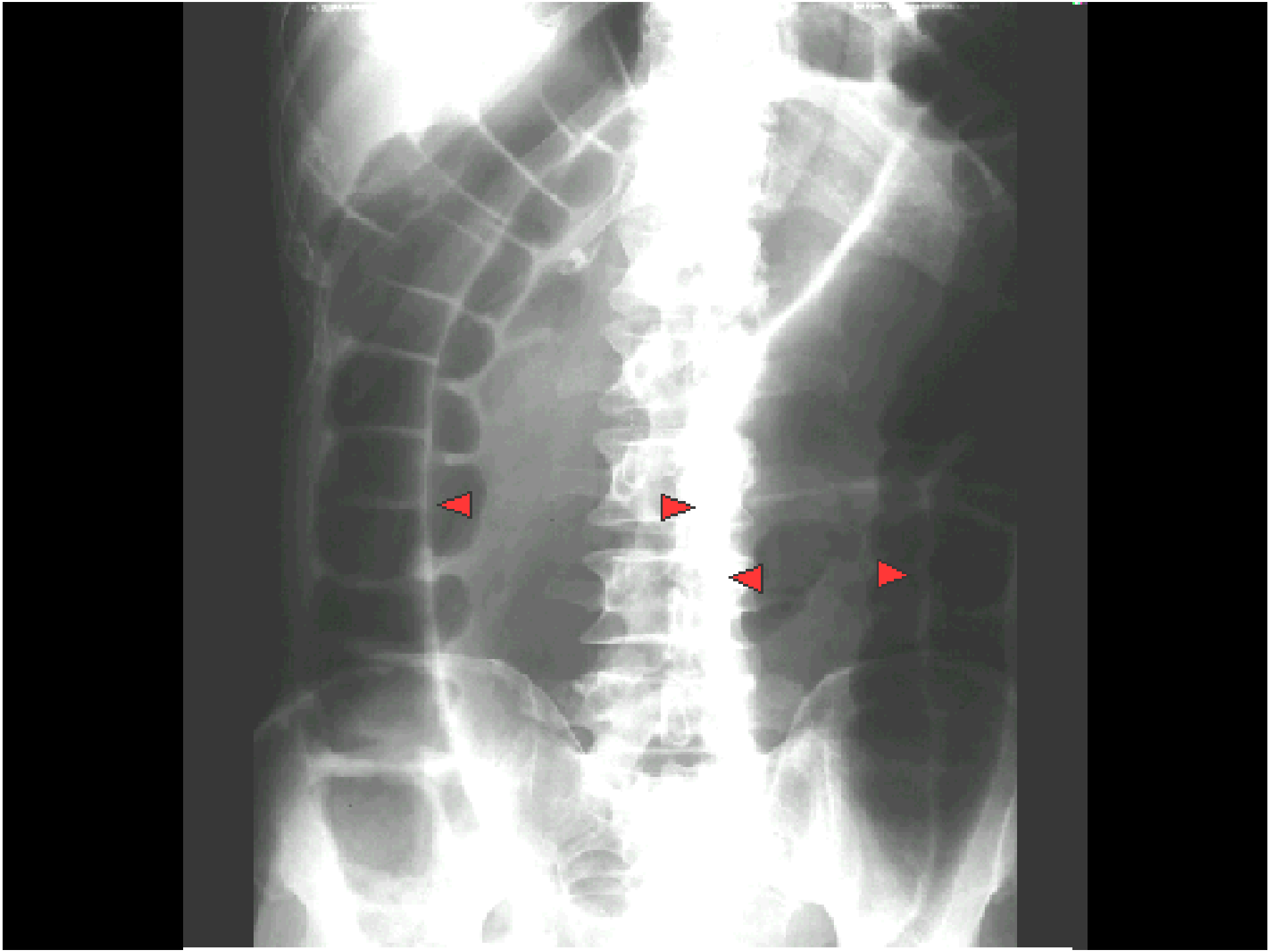
Paralytis intestinal

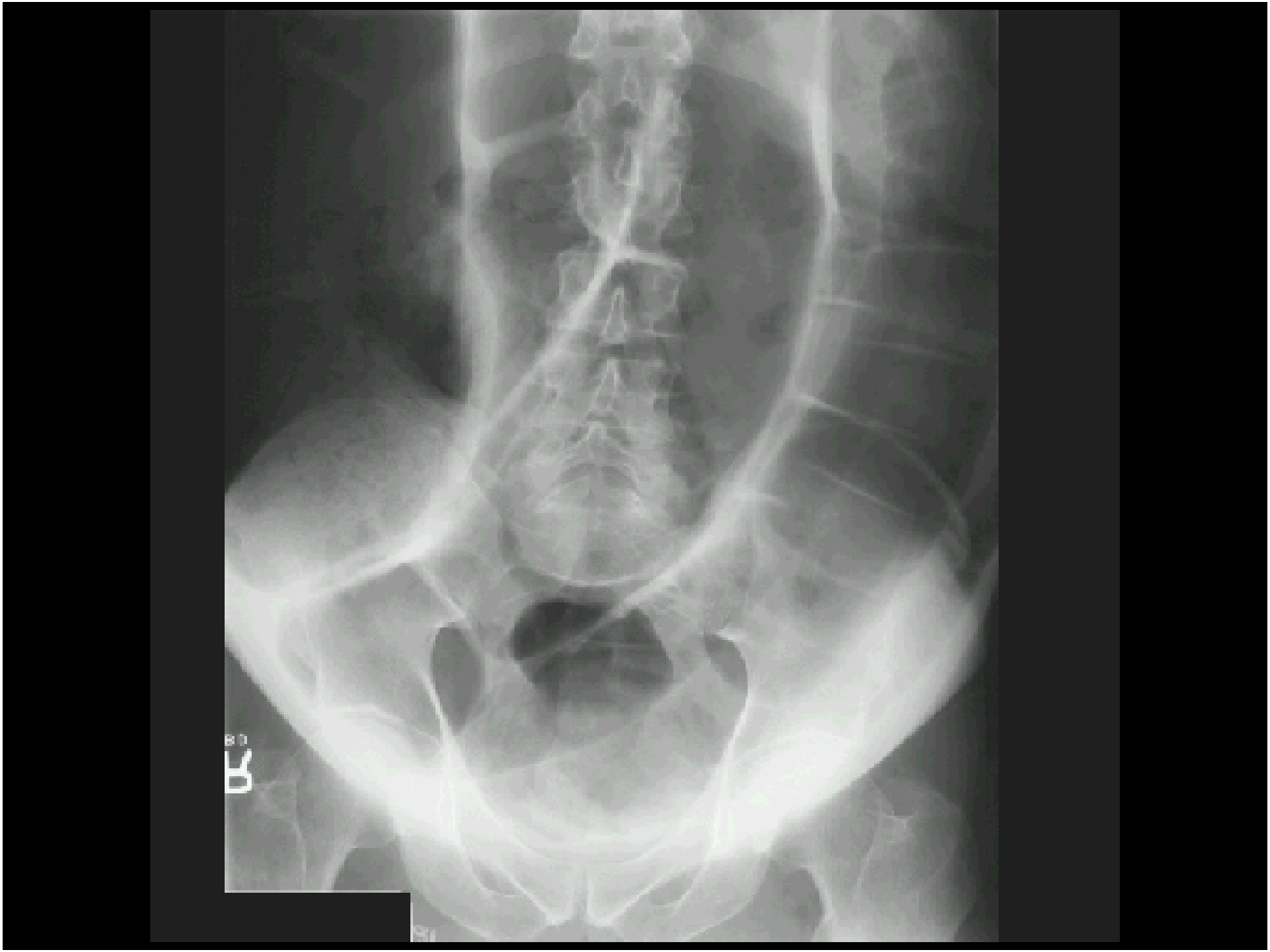
大小肠普遍性胀气呈蜂窝状，未见气液平面

# Sigmoid Volvulus

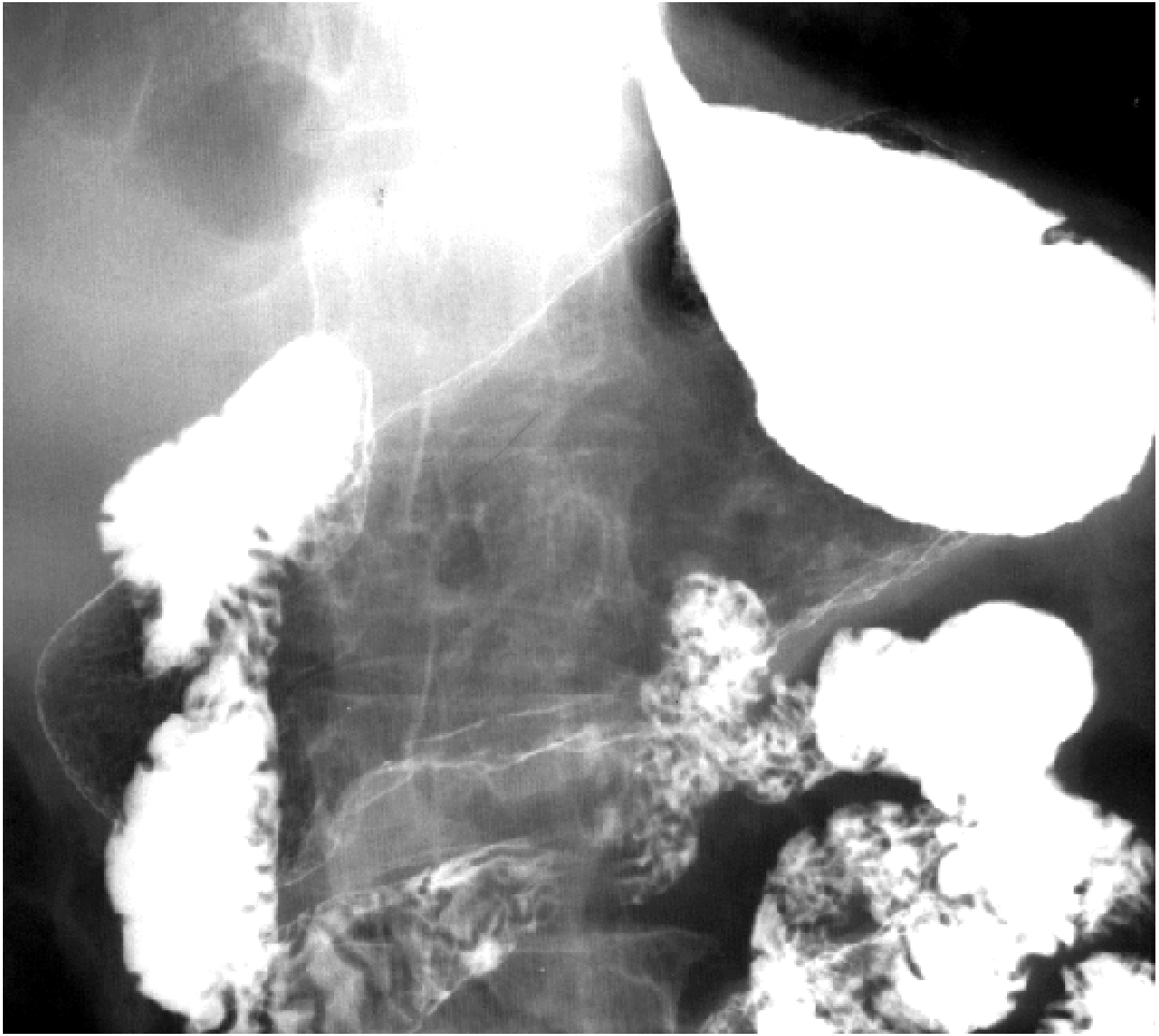



A huge,distended,gas-filled loop of sigmoid colon

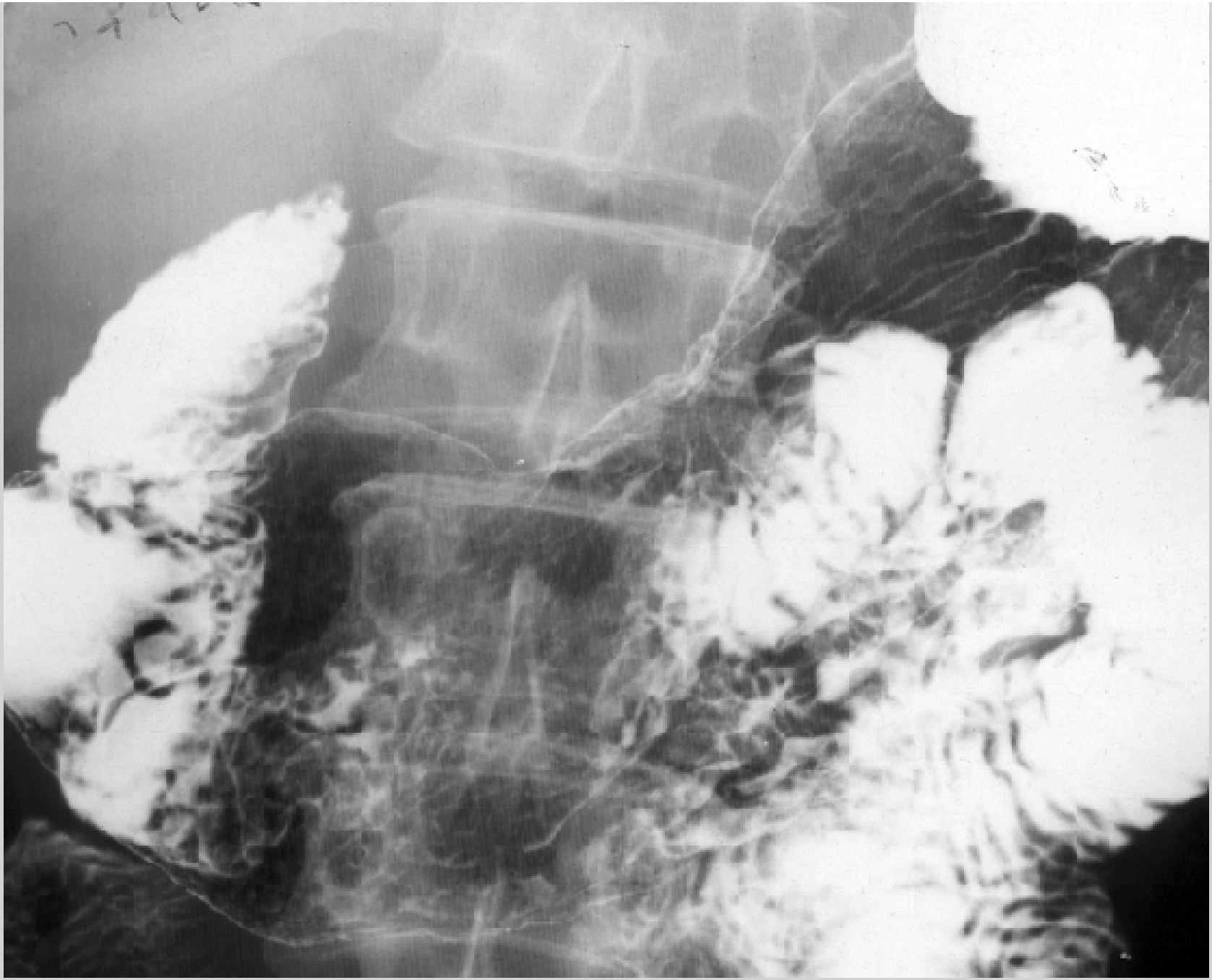




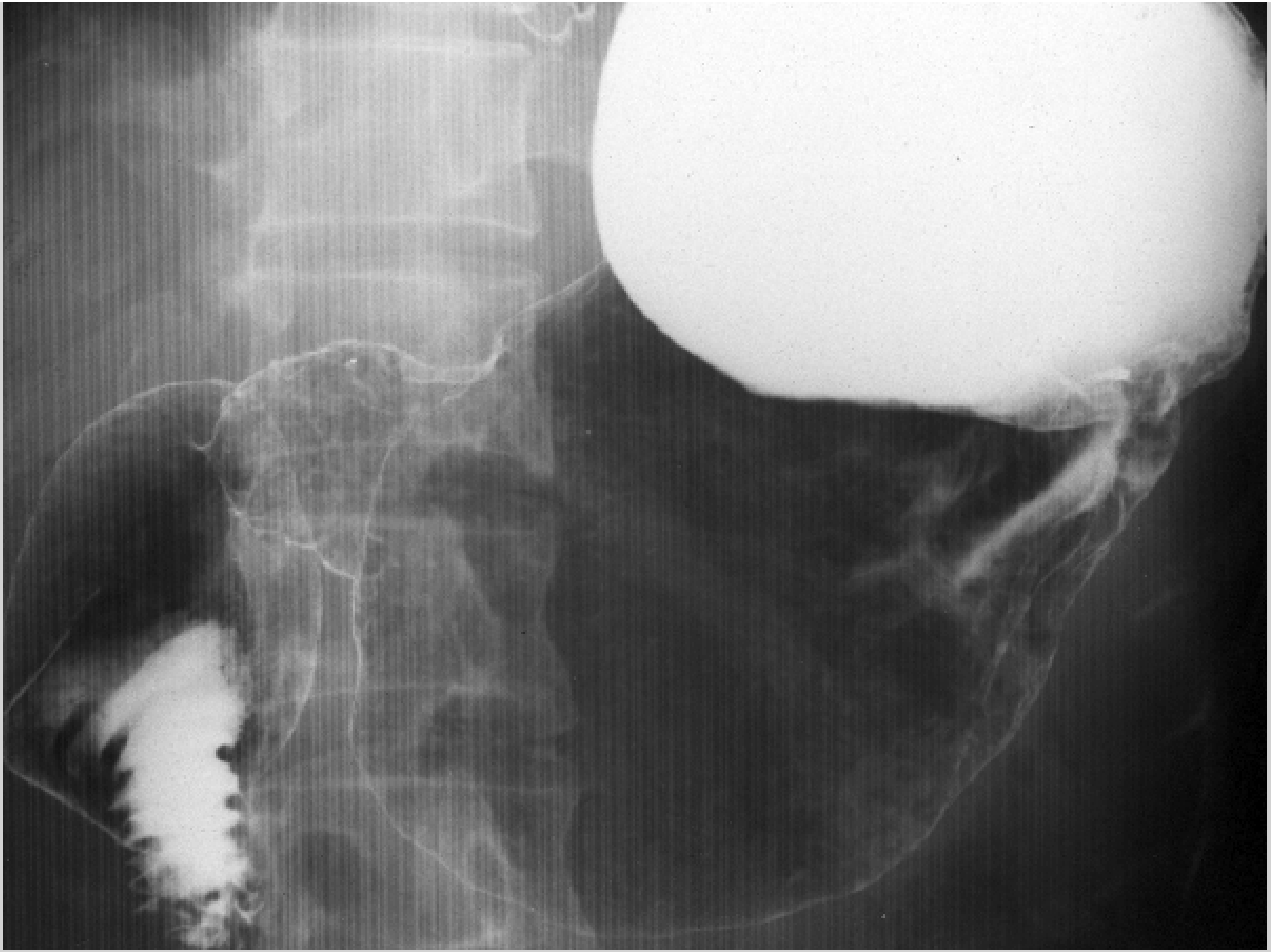
# The end



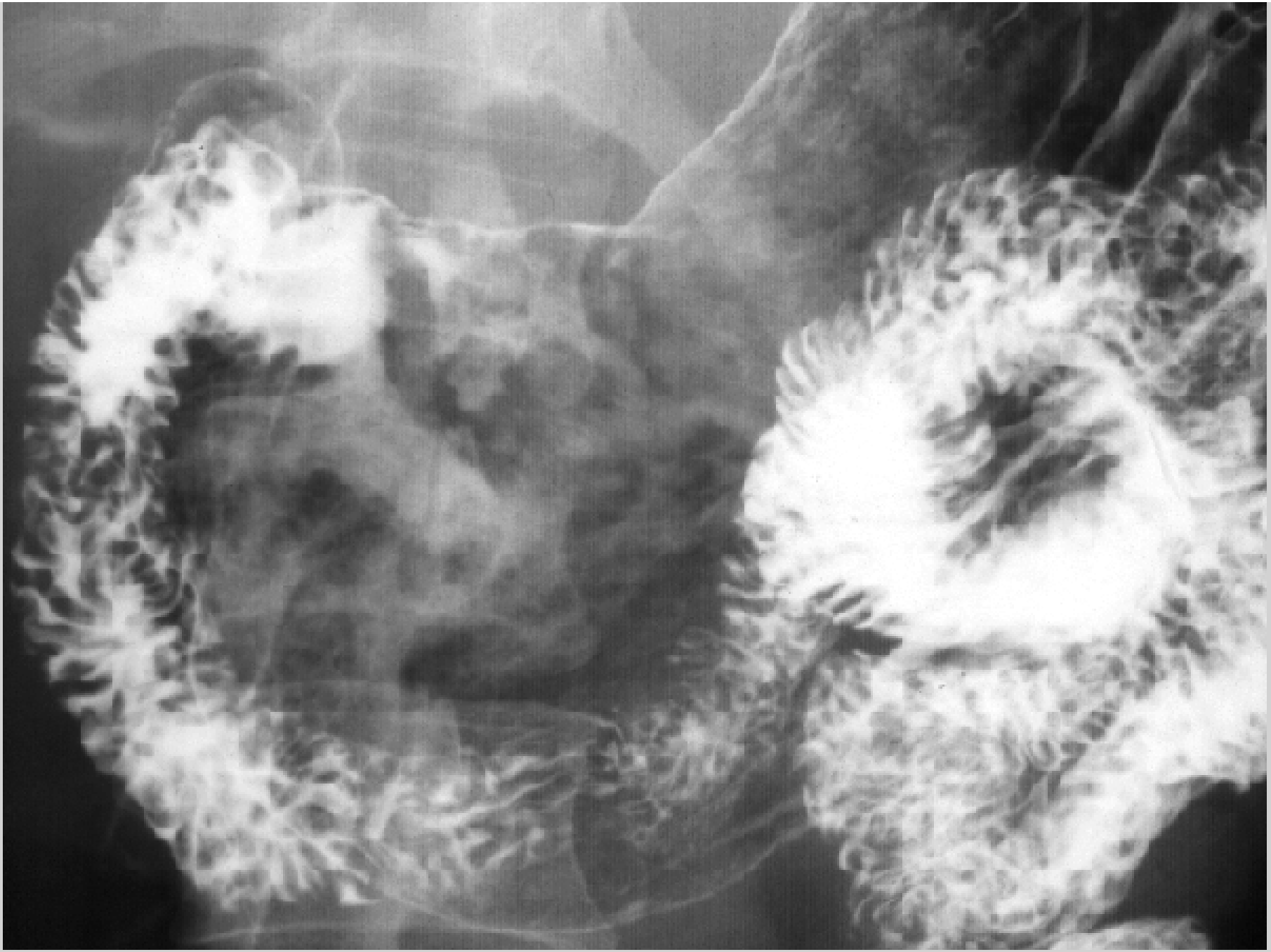
早期胃癌：
胃窦大弯限局性胃壁伸展不良--IIc型早期胃癌。



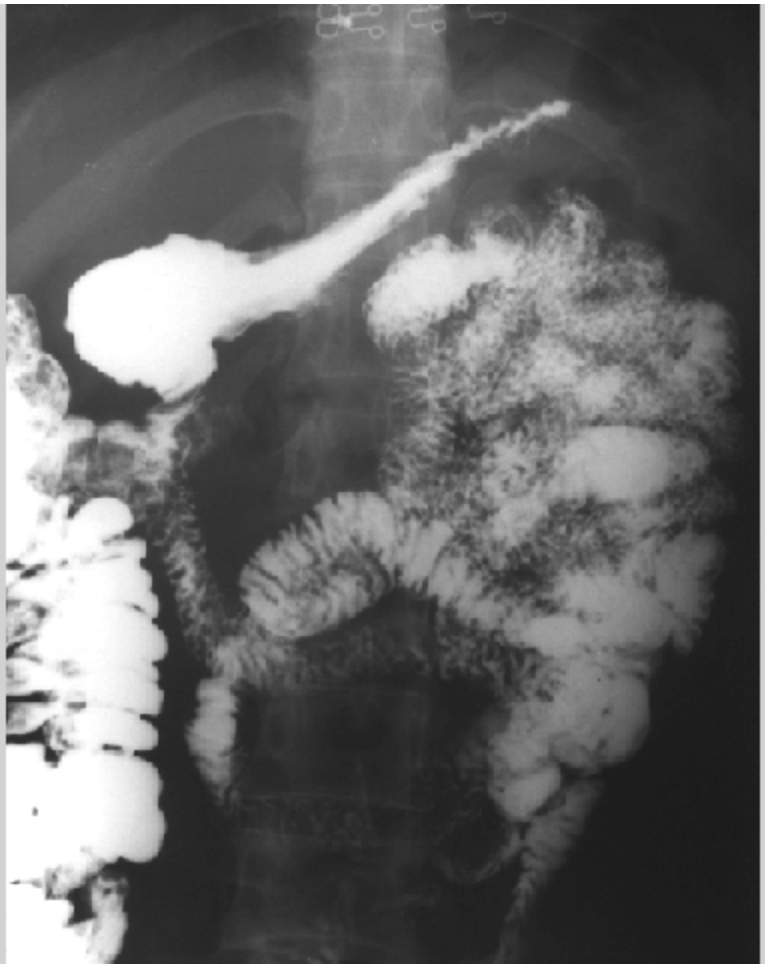
早期胃癌：胃角小弯限局性胃壁伸展不良，邻近粘膜纹向其纠集--IIc型早期胃癌。



早期胃癌：胃窦小弯限局性胃壁伸展不良，局部粘膜结构破坏消失 --IIc型早期胃癌 。



早期胃癌：胃窦小弯轮廓线略僵直，其内侧示浅淡积钡影--IIc型早期胃癌 。



空肠：
　肠管位于左中上腹，粘膜皱襞丰富，呈羽毛状影像。

溃疡型胃癌：
胃窦后壁示一较大溃疡，环堤宽厚，小弯侧环堤平坦消失 -Borr 3 型胃癌。

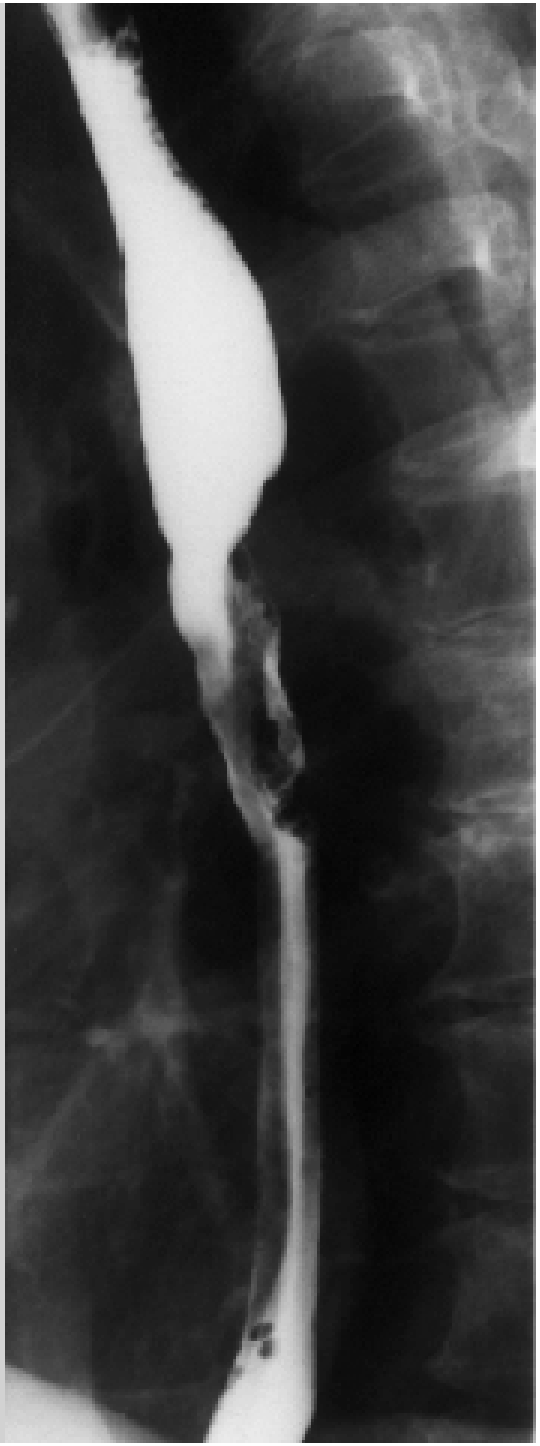
浸润型胃癌：胃角小弯胃壁内凹，边缘硬韧不规。限局浸润型。

溃疡型胃癌：

胃窦小弯示一较小凹陷型病变，龛影位于腔内，形态不规则，周围有环堤 --Borr 2 型胃癌。

贲门癌：

贲门胃底部显示不规则软组织肿块影，呈分叶状，其内部显示弯曲的带状钡影－溃疡型胃癌软组织肿块影为环堤，溃疡被包围在肿块中。

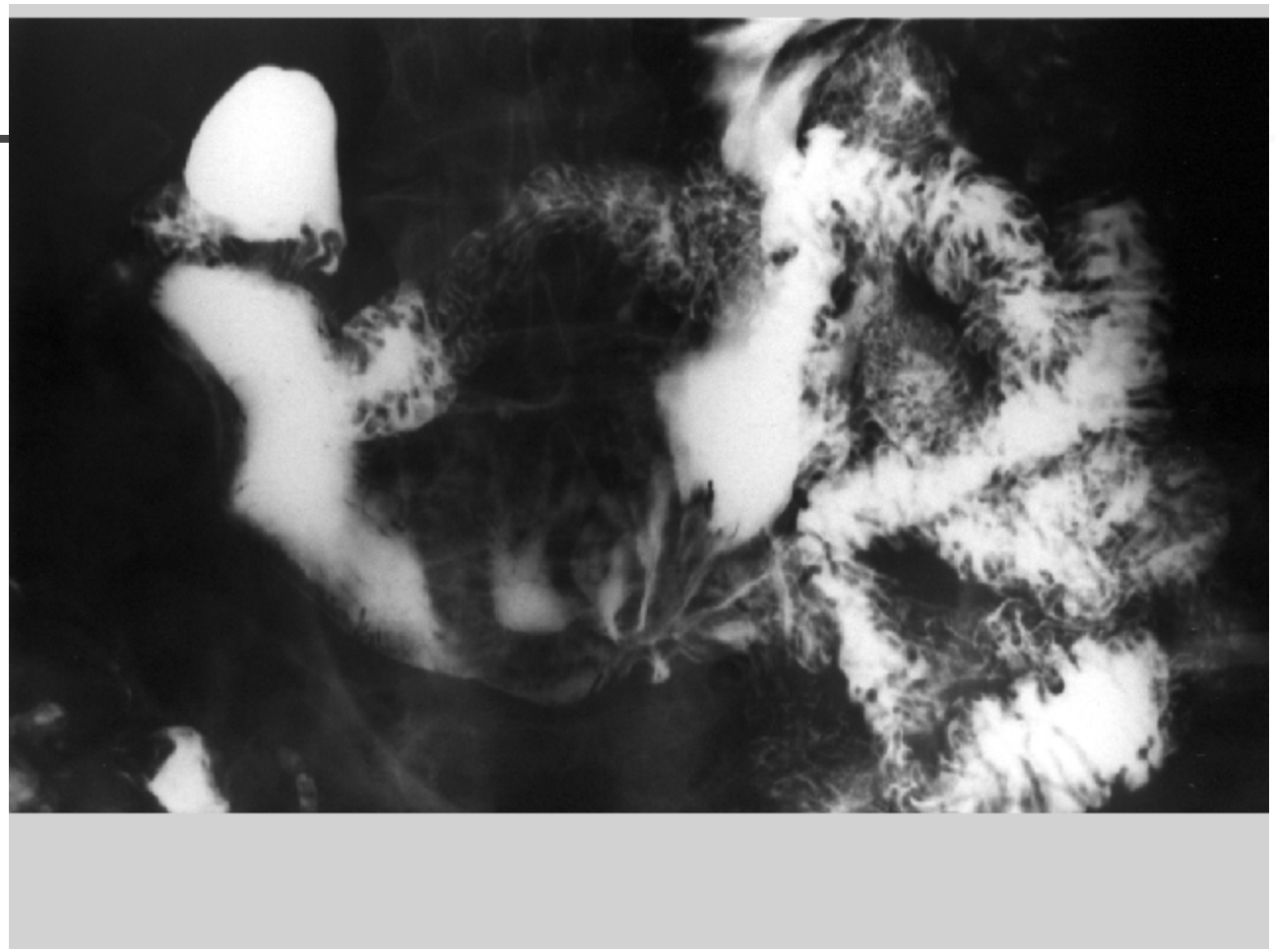


食管癌：

右前斜位示食管中段限局性缩窄，边缘毛糙不规则，左前斜位显示病变区为偏心性缩窄，并可见溃疡及环堤。

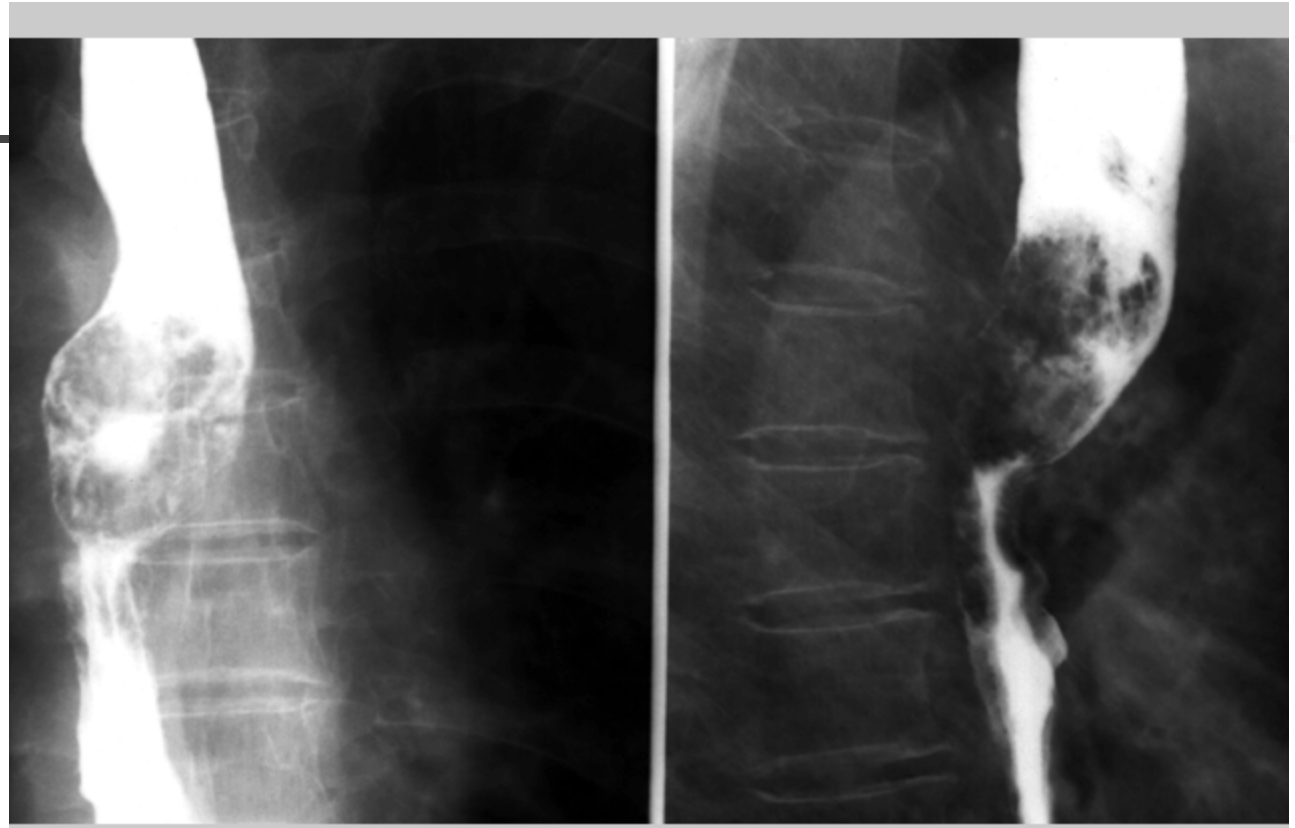
贲门癌：

右前斜位相示贲门部不规则软组织肿块影；仰卧大角度左前斜位相示贲门部较大溃疡积钡影，其边缘有指压迹。

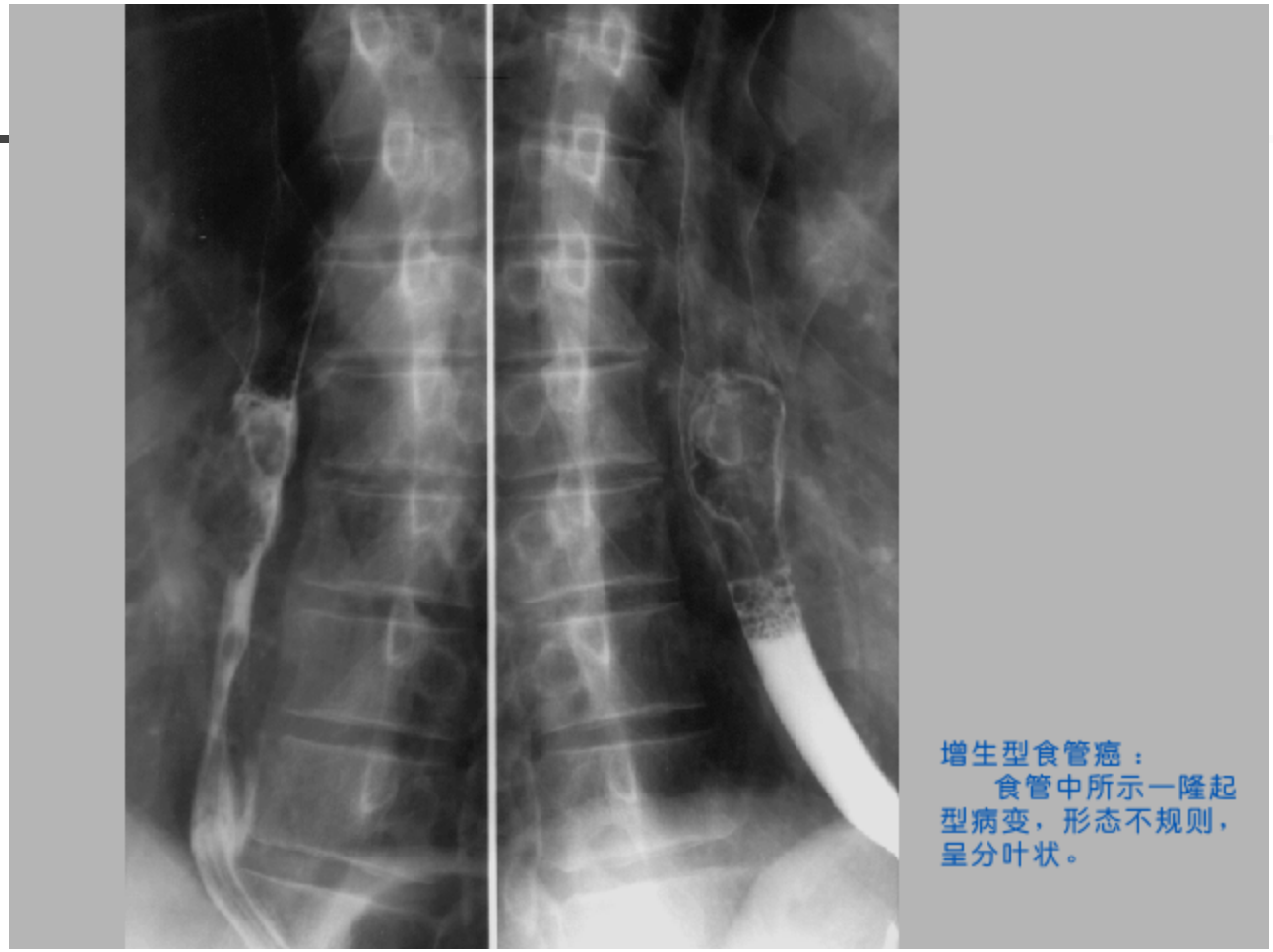


浸润型食管癌：

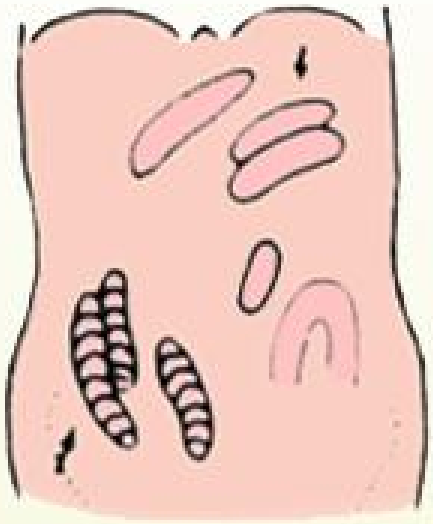
食管中段限局性管腔缩窄，局部粘膜结构紊乱破坏。



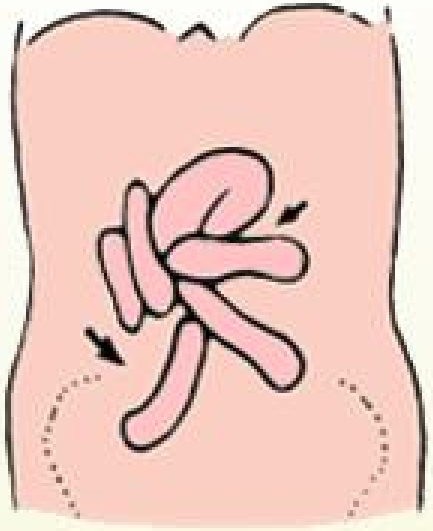
增生型食管癌：食管中所示一隆起型病变，形态不规则，呈分叶状。



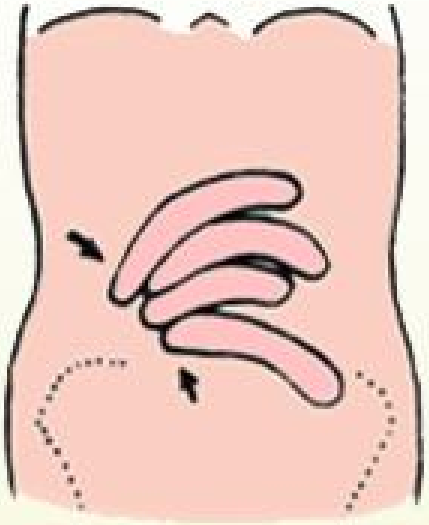
增生型食管癌：
食管中所示一隆起型病变，形态不规则，呈分叶状。



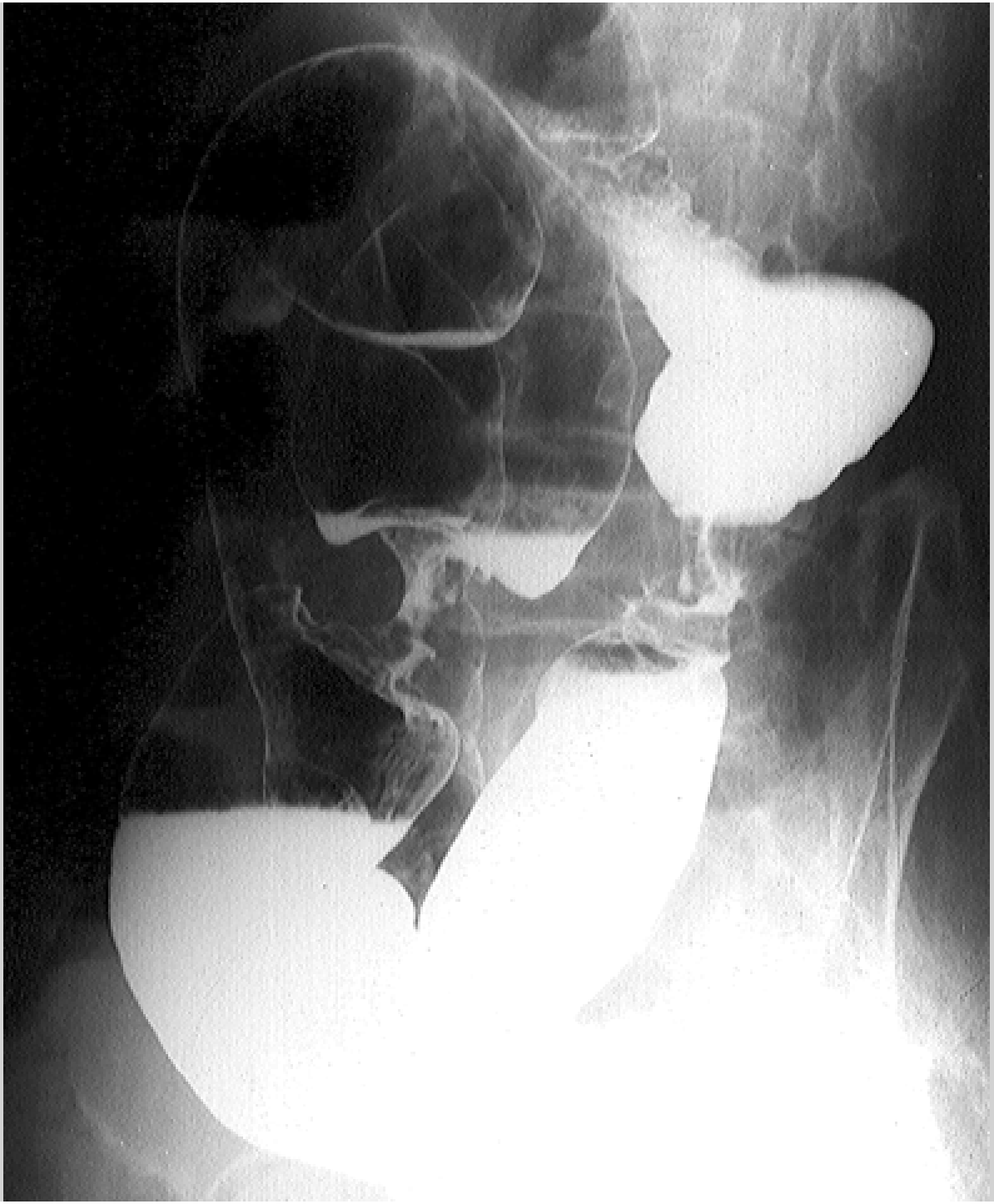
空回肠转位，回肠在左上，空肠在右下



肠曲花瓣状排列



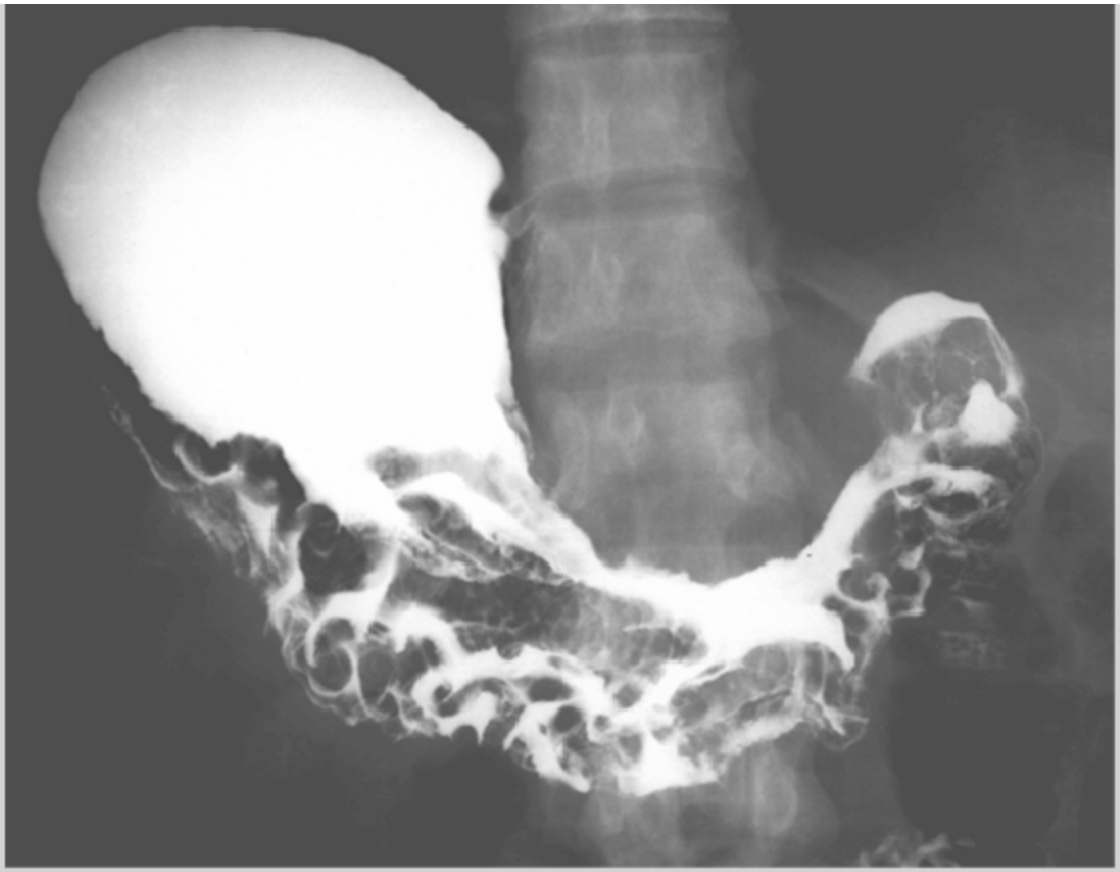
肠曲排列如一串香蕉



结肠癌：
乙状结肠中段限局性管腔缩窄，管壁僵硬不规则－浸润型

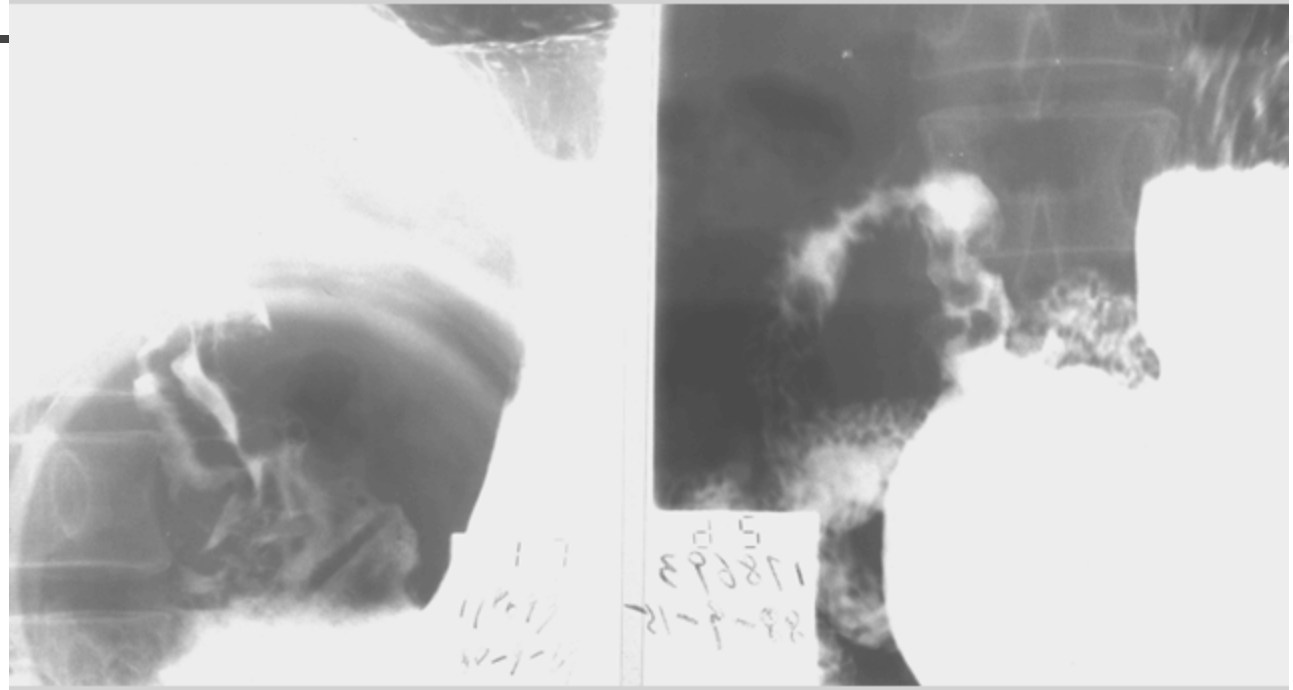
龛影：

胃体下部小弯侧溃疡龛影



癌性粘膜纹增粗：增粗的粘膜纹宽窄不一，长短不等。

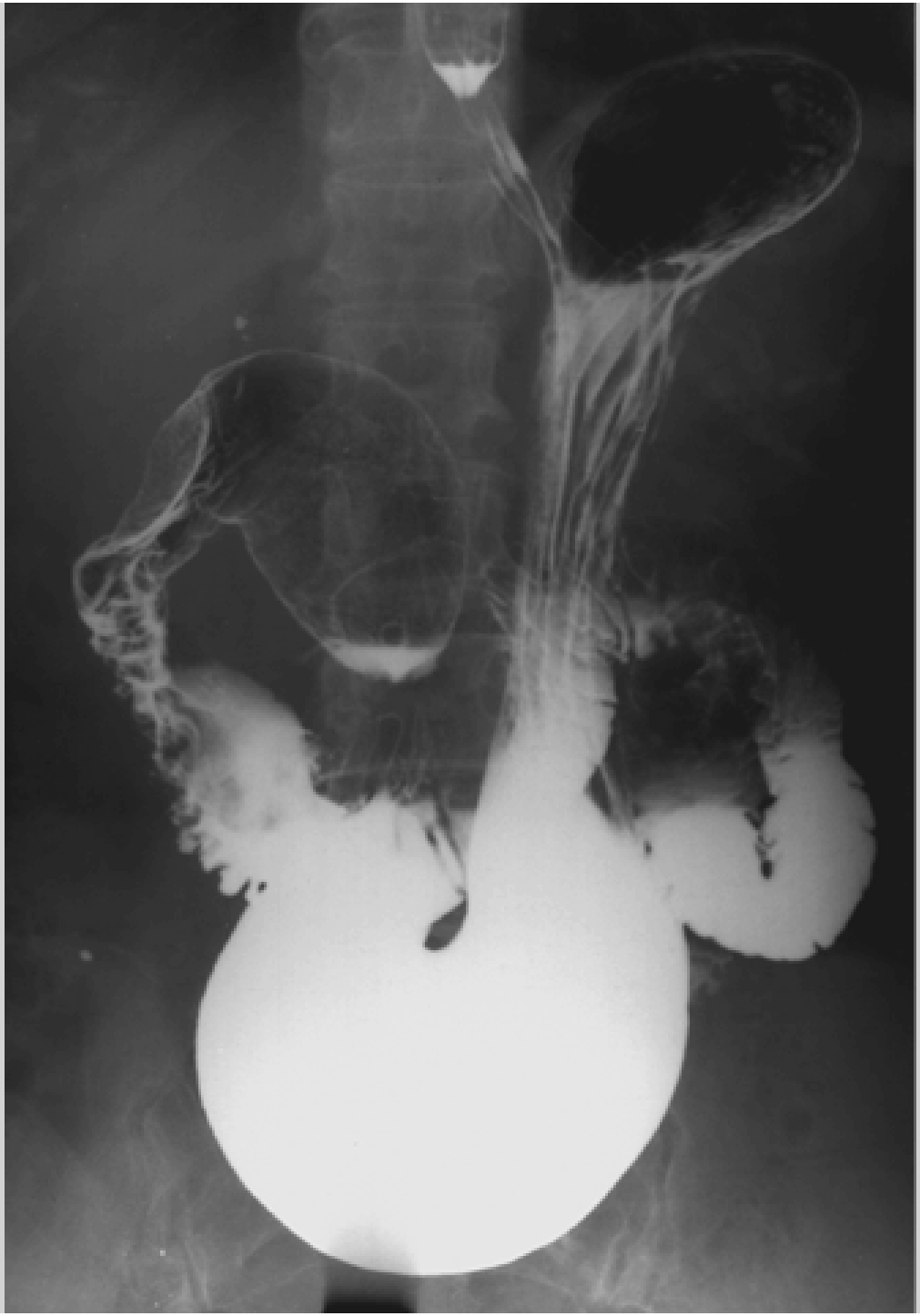
炎性粘膜纹增粗：胃体部粘膜纹普遍增粗迂曲。



胃窦部粘膜纹增粗迂曲——胃窦炎

消化管外压性改变：

十二指肠降段上部外侧受压变窄。局部轮廓线光整柔软——胆囊压迫。

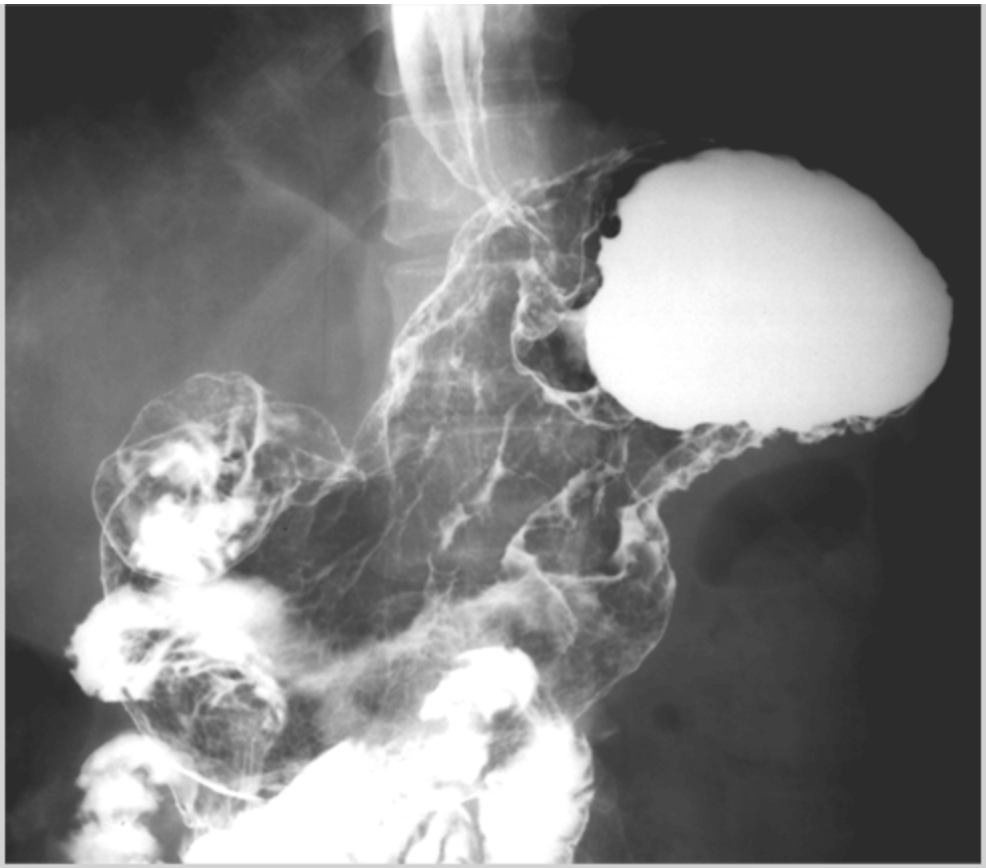


肠管扩张：

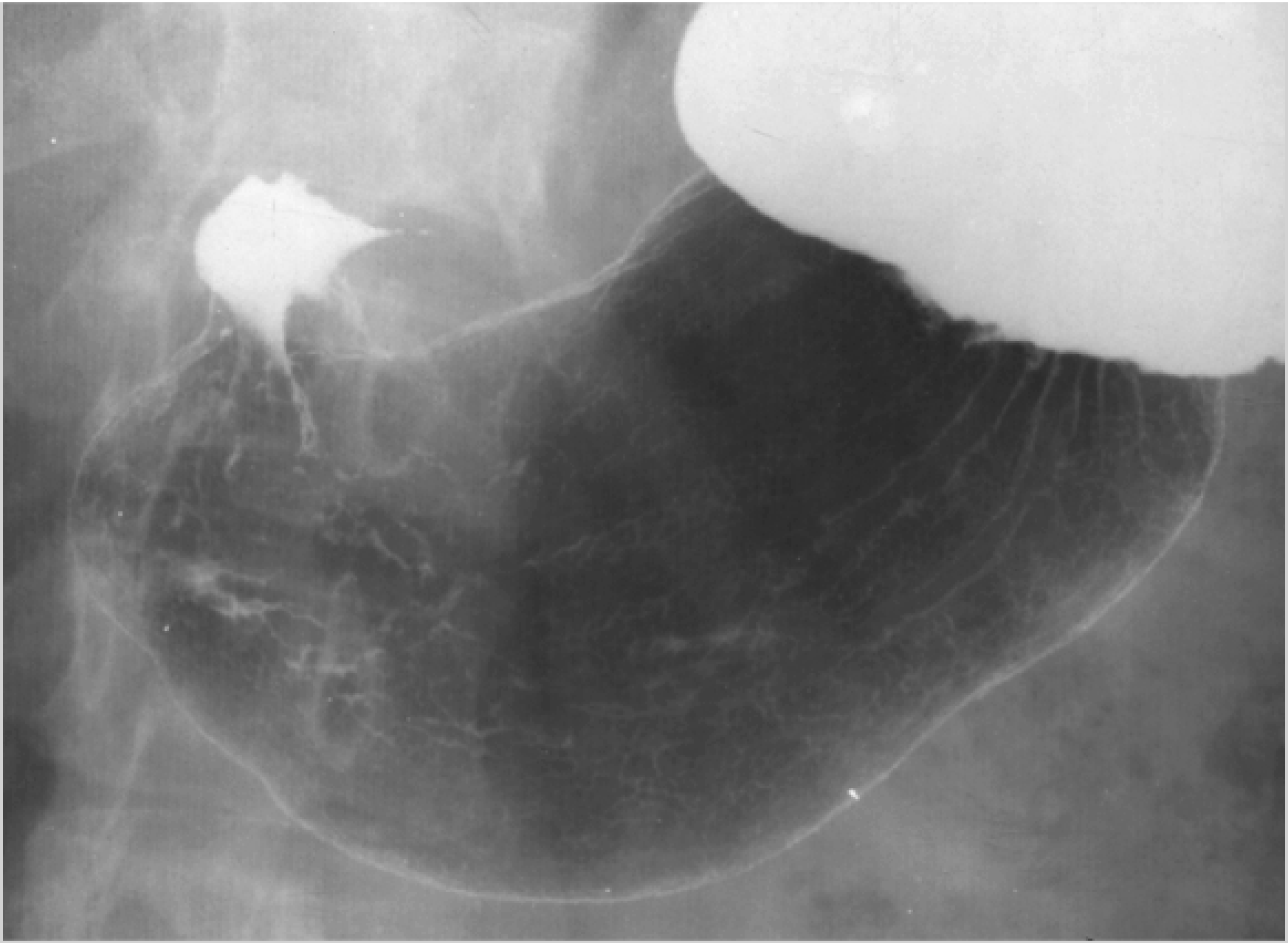
十二指肠降段扩张，其远侧缩窄，造影剂未能通过 --胰腺炎愈后粘连所致。

食管癌：

食管中段示一较小隆起样肿物，形态欠规则，略有分叶 —肿块型。



癌性粘膜纹增粗：胃体部粘膜纹粗大不整，胃腔稍皱缩，形态固定，与胃炎有所不同。

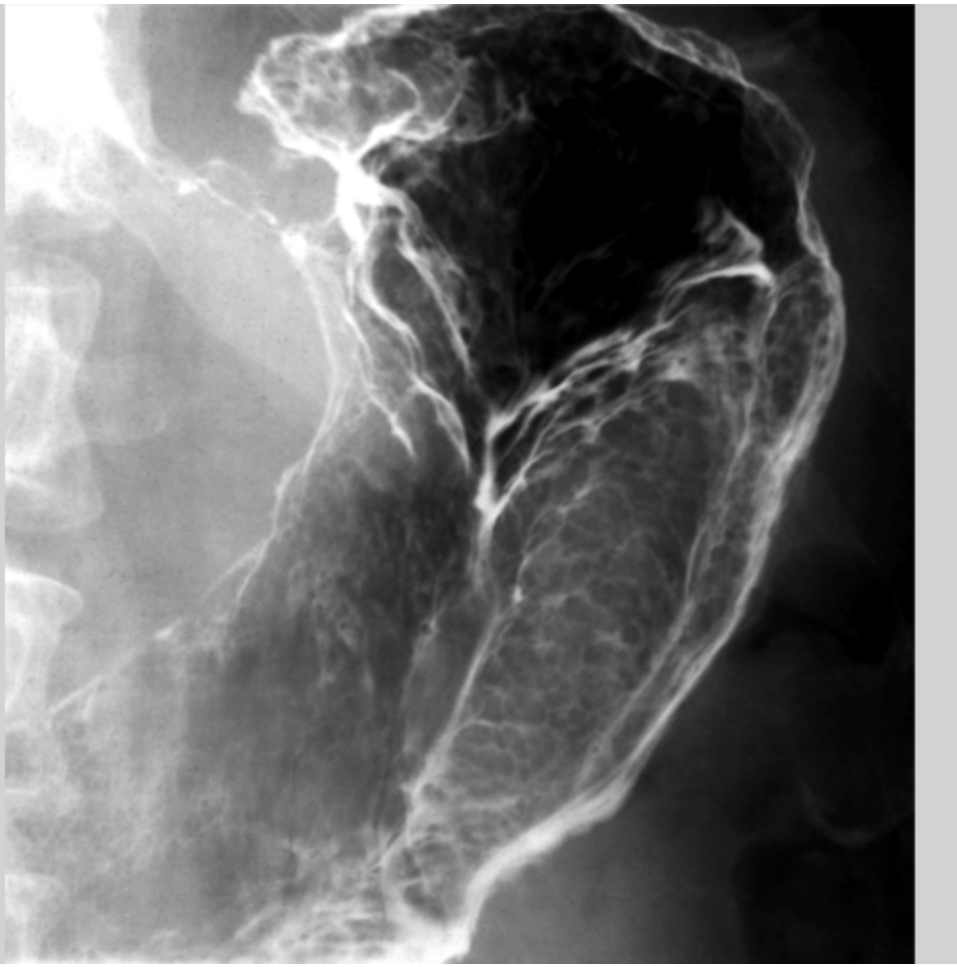


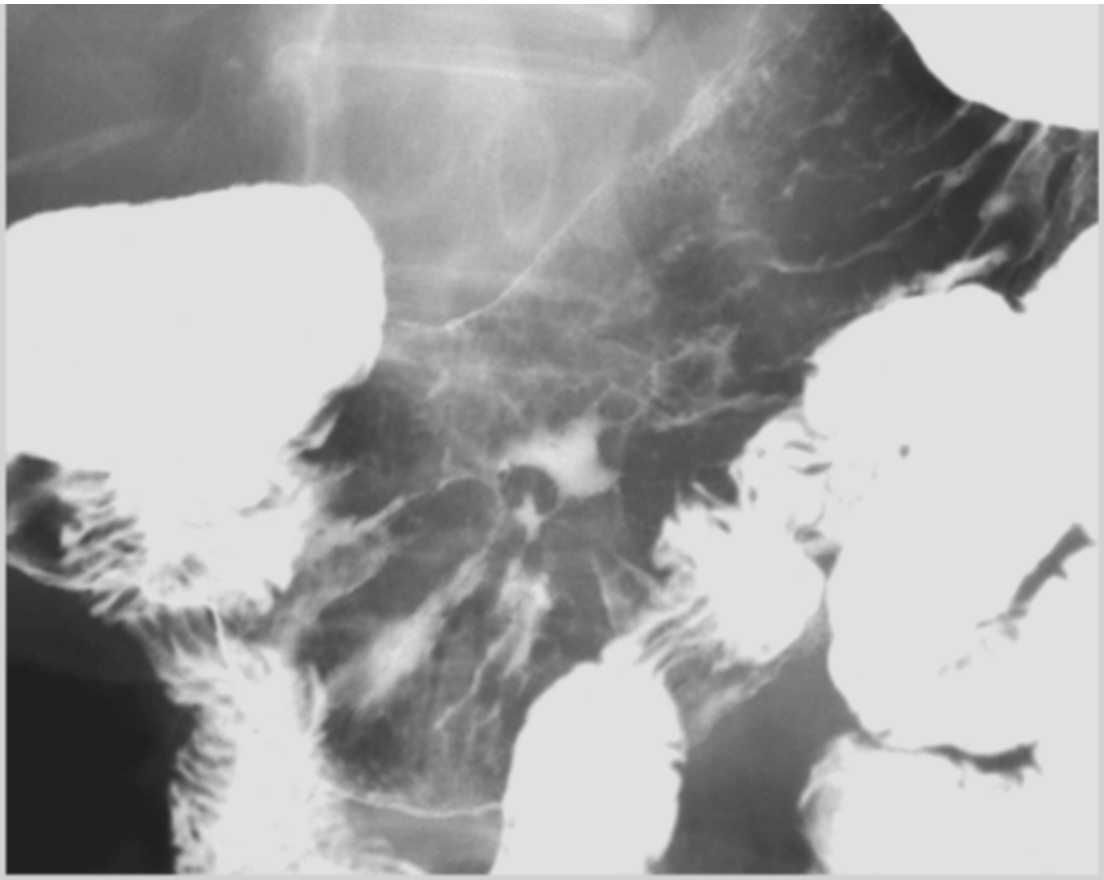
胃小沟小区破坏：

胃窦后壁较大范围胃小区破坏消失，代之以不规则沟槽样钡影--IIc型早癌。

粘膜破坏：

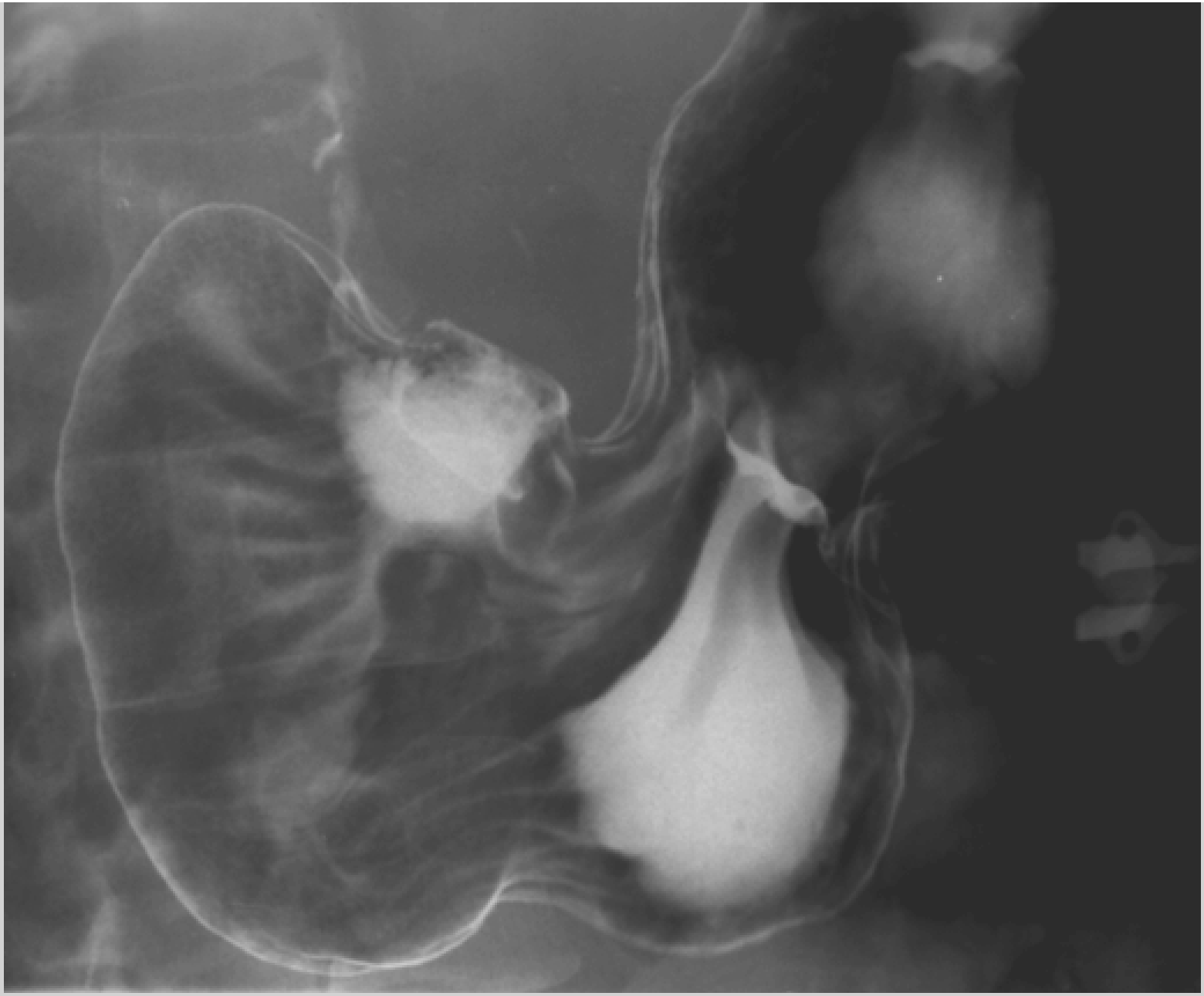
贲门、胃底、胃体管腔缩窄，正常粘膜结构破坏消失，代之以不规则条沟样裂隙影－浸润型胃癌。



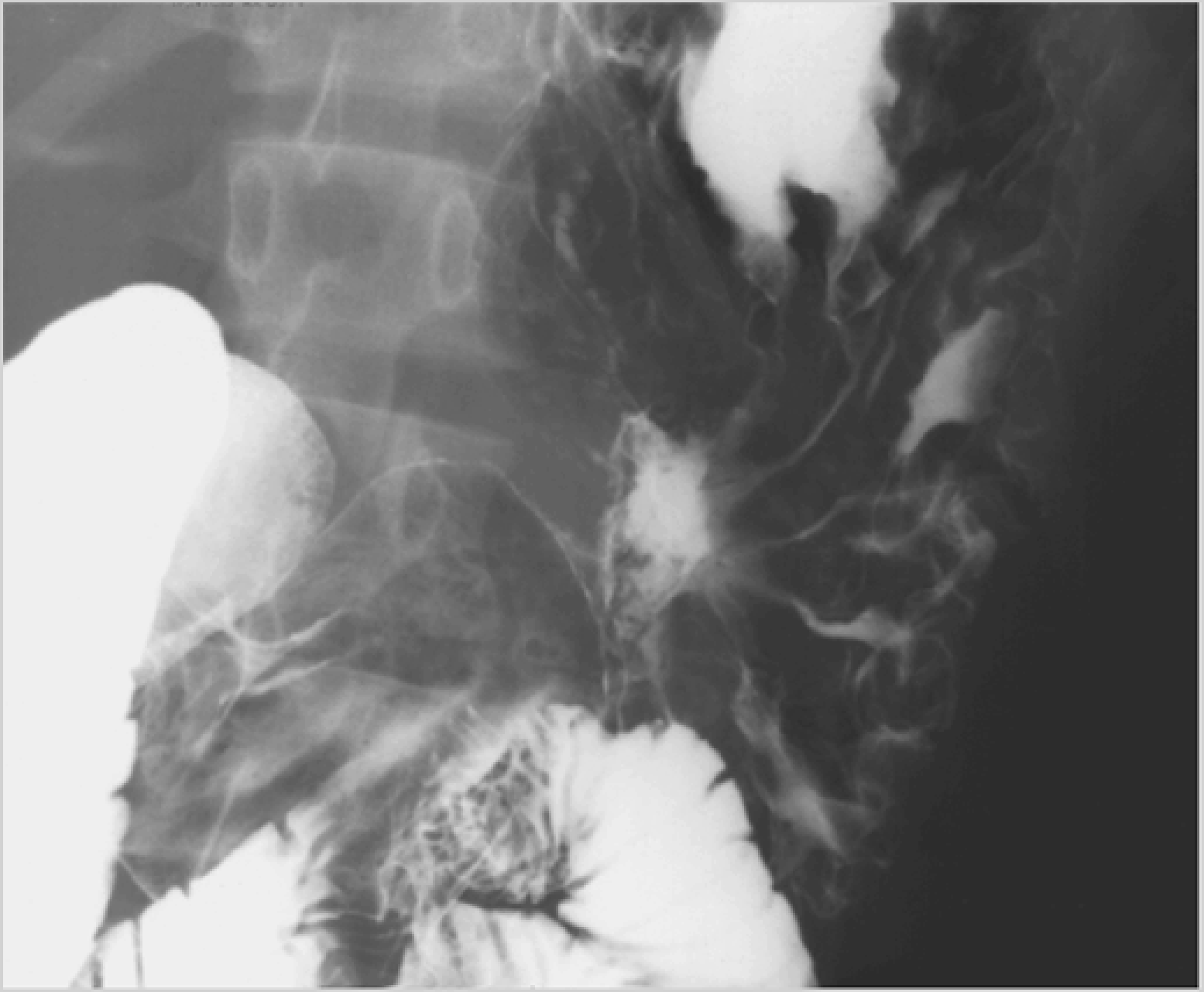


恶性粘膜皱襞：

胃角区后壁示一溃疡钡影，周围粘膜纹纠集，其远端增粗，形态不规，呈恶性皱襞现象。

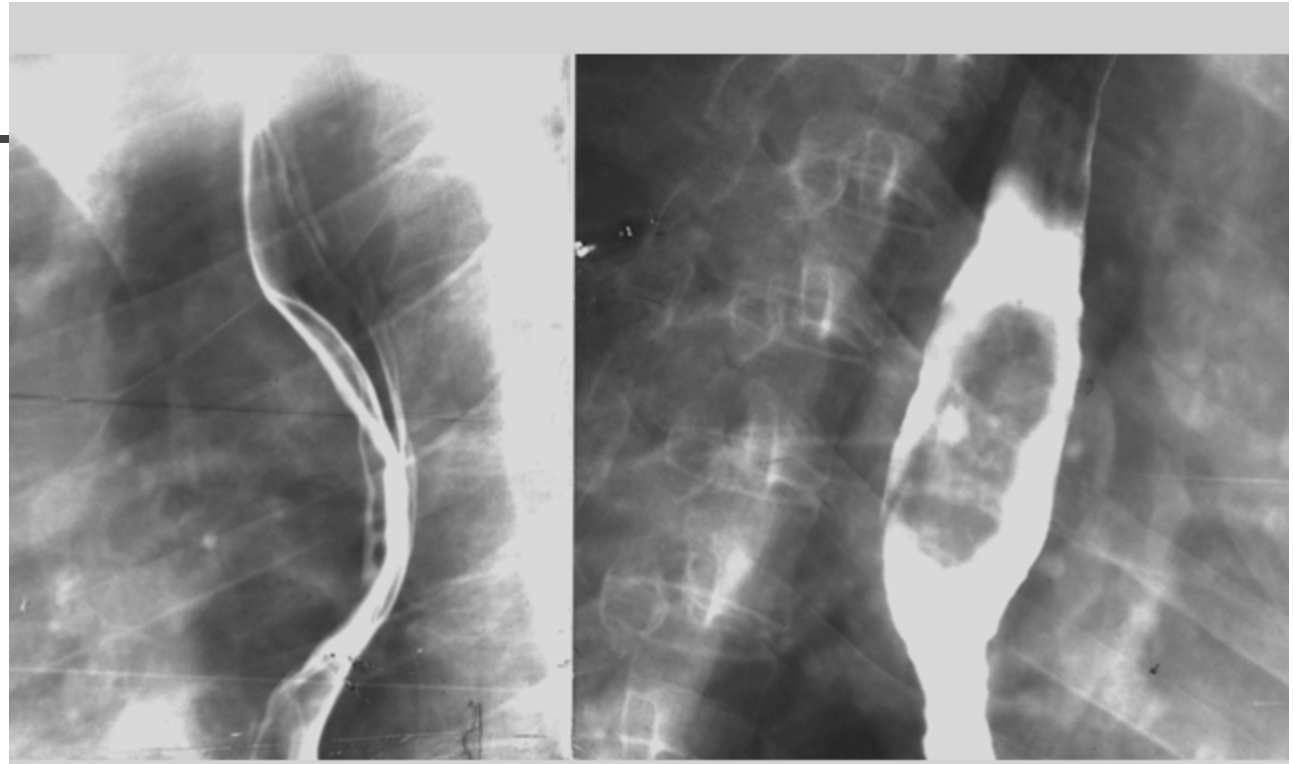


粘膜纹纠集：胃窦小弯示一类圆形较大钡斑，周围粘膜纹纠集——胃溃疡



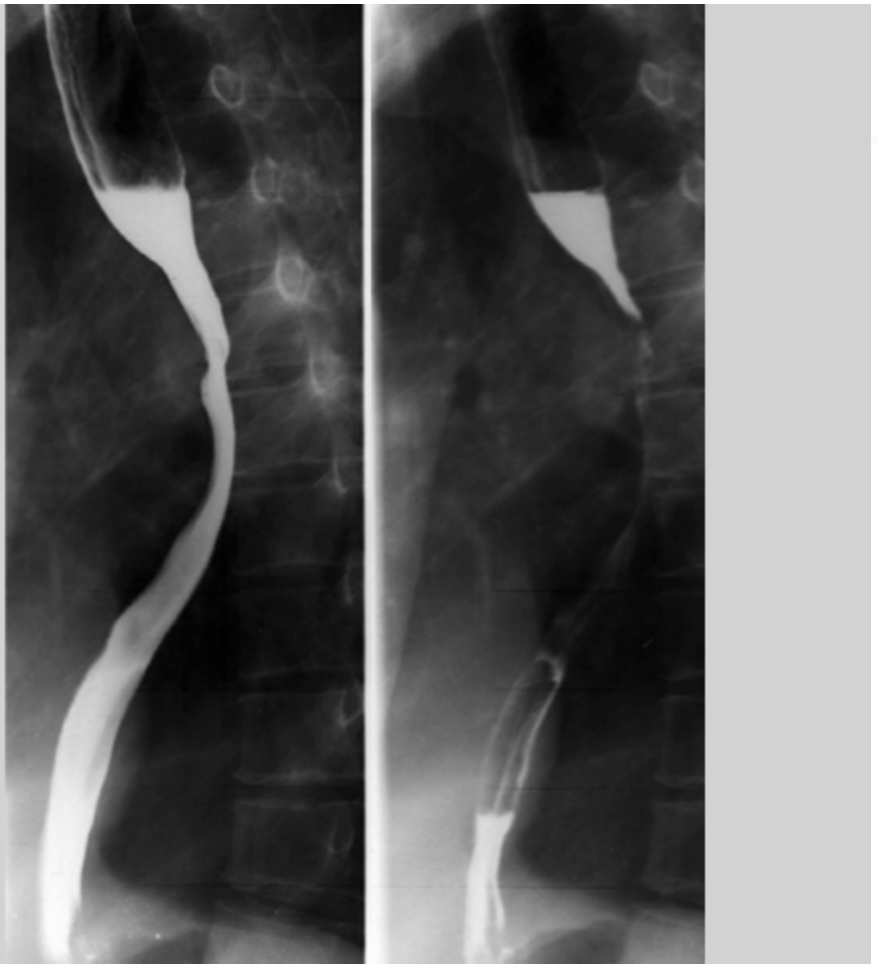
粘膜纹纠集：胃体后壁示一较大溃疡钡斑，

其密度不均（溃疡底部凝血块所致），周围粘膜纹向溃疡集中——胃溃疡



充盈缺损：

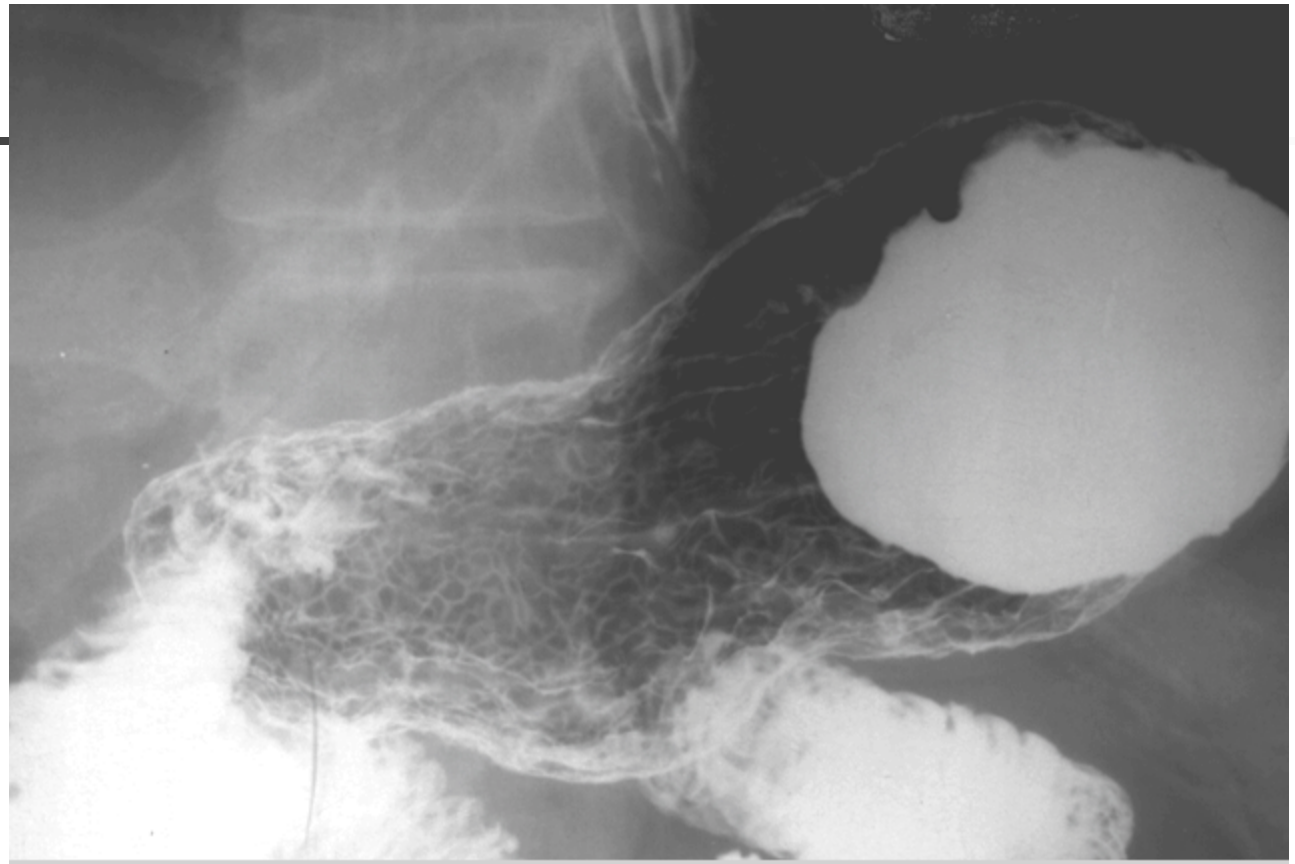
侧面相食管中段一侧性管腔内突起，其与正常管壁间呈钝角。正面相病变区管腔扩大，其内示一长圆形充盈缺损，其中心点状钡影为肿瘤表面溃疡 ——食管平滑肌瘤 。



食管外压性改变：
食管中段管腔变窄，略迂曲，局部管壁光整。

胃憩室：

胃底部限局性囊袋样外突，其内可见粘膜皱襞且与胃底皱襞相连接。



胃小区异常：胃后壁网眼状结构大小不等，形态不规则。

管腔扩张：

回肠远侧管腔明显扩大，其前端肠管缩窄、硬韧，粘膜破坏－回肠远端肿瘤性狭窄所至管腔扩张。

管腔扩张：
回肠肠腔扩张，粘膜皱襞呈横行排列，状似“弹簧弓”。